SCIENCE AND INDUSTRY

FEBRUARY, 1944

FEB 18 1944

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fueloil & oil heat STACKS

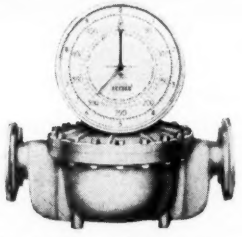
REFERENCE
DO NOT LOAN

THIS IS MORE THAN A DROP OF OIL

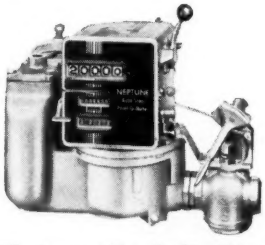
To you as a bulk plant operator, oil in *any* quantity is a money investment from which a fair return is expected. How well you guard that investment until it is sold determines the size of the black figures on your books.

Metering at your bulk plant helps to protect your profits. It removes guesswork from loading operations, makes topping off accurate, eliminates spillage losses, and saves truck and driver waiting time. And with your tank trucks meter equipped, customers are assured of full measure delivered—have greater confidence in you and your drivers.

When you install Neptune Red Seal Meters you invest in a proved method of accurate cost control. That is why we believe you should know more about these dependable meters; also about their record for sustained accuracy and long life. Write for complete data.



This Type A Red Seal Meter for service on bulk plant loading rack fill pipes recalibrates each tank truck compartment at each loading, saves time and stops spillage waste.



The Compact-Type Red Seal Meter for tank trucks combines in one complete unit all the equipment necessary for accurate metering. Auto-Stop Print-O-Meter Register shown.

NEPTUNE RED SEAL METERS

NEPTUNE METER COMPANY
50 West 50th Street New York 20, N. Y.

Branches: Atlanta, Boston, Chicago, Dallas, Denver, Kansas City, Mo., Los Angeles, Louisville, Philadelphia, Portland, Ore., San Francisco, Long Branch, Ontario, Canada.

N-02-44

"What kind of a noise . . .?"

THE phone is ringing as you open the shop door. It's Mrs. John Adams, just a few blocks down the street . . .

"Oh, Mr. Davis, I thought I'd better call you right away. Our burner is making a funny noise, I think."

"What kind of a noise, Mrs. Adams?"

"Well, it's hard to describe. Kind of high-pitched and steady. I can't tell just where it comes from but I'm sure it's the burner . . ."

"Is your house warm, Mrs. Adams?"

"Yes, the burner is running all right, evidently, but I don't know just what to make of this kind of whine."

"I think I know what it is. We'll be over in a little while . . ."

When you get there, you cock an ear to the noise. It might be either vacuum squawk or tank hum—in some installations they're a lot alike.

But you know it *can't* be tank hum because there's a Sundstrand pump on the burner. You know the Sundstrand anti-hum diaphragm doesn't give way unless it's punctured or damaged in servicing.

So it must be vacuum squawk and the most likely cause is a dirty and nearly stopped-up strainer. Take the cover off the pump—and there's your answer. Pull the strainer out carefully and clean it off with carbon tet or a good cleaner—or hot water will do if a solvent isn't handy. Put back the strainer and the gasket and the cover and let 'er go. O.K.? Swell . . .

Remember, too, to use Sundstrand S-1, S-2, or 1-OB Fuel Units if you have to replace any old or worn-out pumps. Write for Bulletins 106 and 107 showing mounting adaptors and foot mountings. Be sure you've got our free Service Bulletin 102.

ARMY E NAVY

Keep Buying War Bonds

SUNDSTRAND PUMP DIVISION

SUNDSTRAND MACHINE TOOL CO. ROCKFORD ILLINOIS U.S.A.

2556 ELEVENTH ST.
ROCKFORD, ILLINOIS

fuel oil & oil heat

SERVICE ON WEBSTER ELECTRIC FUEL UNITS IS EASY AS A ★ B ★ C

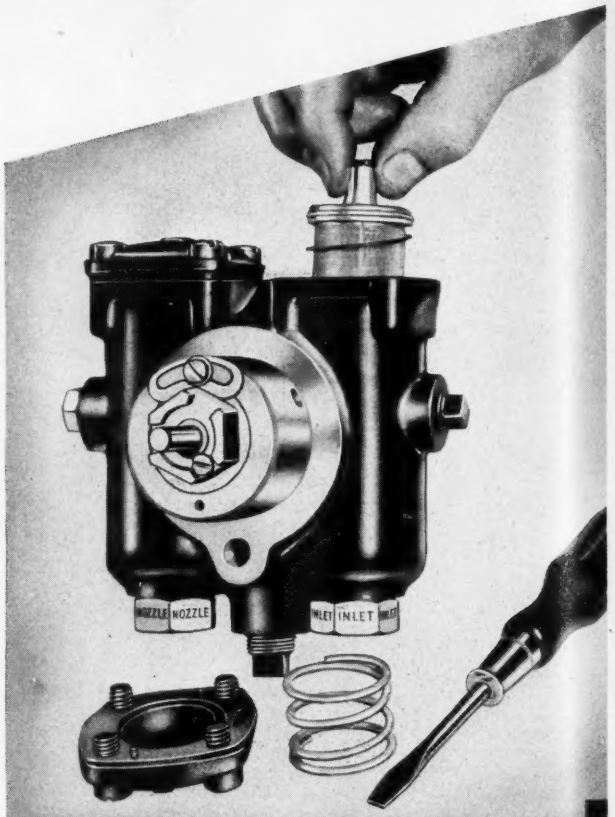
Webster Electric Fuel Units are engineered to give trouble-free performance over a long period of time. Dealers who sold them and their customers have never had a better opportunity to appreciate their dependable operation than under present day conditions.

Service on Webster Electric Fuel Units is as easy as A B C . . . three tools are a complete service kit: an adjustable wrench, a screw driver, and an Allen wrench are all that are needed to do any ordinary service right on the job.

Service on these units is not only quick and easy but CLEAN. There is no chance of spilling oil because the cylindrical monel metal strainer is conveniently located for removing and cleaning. It is taken out vertically through the top of the housing and is open at both ends, allowing a brush to be pushed clear through for cleaning.

These are factors that make it easy for Webster Electric Authorized Service Stations and Sales Representatives in all parts of the country to provide 100% service to users of Webster Electric Fuel Units. They are reasons why Webster Electric's leadership in the oil burner field will bring new profits to wide-awake dealers when peace comes again.

Send for a list of Webster Electric Authorized Service Stations and Representatives. They will cooperate with you to the fullest extent.



WEBSTER ELECTRIC
"TYPE T" FUEL UNIT

Let's All Back the Attack—Buy Extra War Bonds

WEBSTER ELECTRIC

"Where Quality is a Responsibility and Fair Dealing an Obligation"

WEBSTER ELECTRIC COMPANY
Racine, Wisconsin, U. S. A. Established 1909
Export Dept.: 13 East 40th St., New York (16), N. Y.
Cable Address: "ARLAB" New York City

Names in the news

Wallace Sayre, deputy director of the Fuel Rationing Div., OPA, has left the Division to become director of personnel for the entire OPA organization.

Col. W. F. Rockwell, president of Pittsburgh Equitable Meter Co., and of Timken-Silent Automatic, has been elected a director of the First National Bank and of the Peoples-Pittsburgh Trust Co., both of Pittsburgh.

William R. Northlich, of the Washington office of Owens-Corning Fiberglas Corp., has been transferred to the company's general office in Toledo, as assistant to the general sales manager.

Nelson L. Little, facory engineer and field representative for H. A. Thrush & Co., Peru, Ind., has been placed in charge of the Virginia-North Carolina area, with headquarters at Richmond.

Henry Rowold, manager of national account sales for Mack - International Motor Truck Corp., has been elected vice-president. He is also a member of the Central Truck Tire Rating Board of OPA.

Walter H. Parker, vice-president of the Pittsburgh Equitable Meter Co., died December 28 at his Pittsburgh home, aged 51.

Dr. Ferry C. Houghten, now a Lieut. Commander, USNR, has been awarded the F. Paul Anderson Medal of the American Society of Heating & Ventilating Engineers "for outstanding research over a long period of years in the fields of heating, ventilating and airconditioning."

J. Harry Ebbert, who recently resigned as vice-president and general manager of the Armstrong Co., has been elected vice-president of Grant Wilson, Inc., Chicago.

W. S. Shipley, board chairman, and *S. E. Lauer,* president, respectively, of the York Corp., York, Pa., were reelected at a directors' meeting on January 13. The company's other eight officers were also reelected for 1944.

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fueloil & oil heat

FEBRUARY 1944

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NEW *"SPEED"* REPLACEMENTS
FOR WEBSTER FUEL UNITS AND TRANSFORMERS

All you need to do is state the type number (ex: IT- A3105) of your old Webster Fuel unit and we will send you at once an exact duplicate rebuilt by us.

Our expertly rebuilt Webster units carry the same guarantee as a new unit.

You may return the defective unit to us later for credit or cash refund.

Rebuilt units are only available for exchange for the same model as turned in and are not offered for sale without exchange.

You can get an exact replacement of any Webster Transformer too—just as easily. Just give the *complete* type number from the name plate and we will duplicate it exactly. Only new transformers are available however (no credit for return of defective one).

Every Webster Fuel Unit and Transformer has a "type number", it gives the complete specifications. Be sure to give it correctly (never mind the serial number).

Remember all the information we need to make advance exact replacements is:

FOR FUEL UNITS:

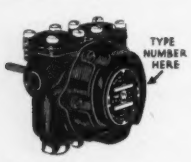
(1) Type number from name plate (example ITA3105, or IN3RT41, etc.)

(2) New or Rebuilt.

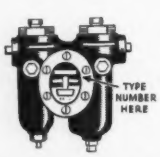
FOR TRANSFORMERS:

(1) Type number from name plate (example 211A, or S211-A1305, etc.)

(2) 110 or 220 volt.



WEBSTER T FUEL UNIT



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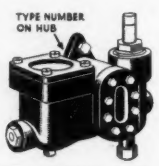

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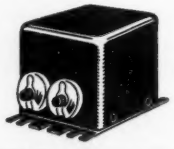

WEBSTER TRANSFORMER

46 Service Stars
CAN'T STOP
SID HARVEY'S SERVICE!
Despite the 46 stars on their service flag, Sid Harvey, Inc., Webster Electric Service Station at Valley Stream, New York, is carrying on the tradition of service on Webster Electric Fuel Units. With such senior employes as Fred Finkenstadt, shown here inspecting a "Q" Fuel Unit, the Harvey organization is doing a magnificent service job.
By using the facilities of such organizations as Sid Harvey, Inc., and others listed on this page, dealers are enabled to make instant repairs and replacements. These Authorized Service Stations are equipped to make repairs on Webster Fuel Units in accordance with factory specifications. By
save time and transportation costs . . .
Webster Electric's
industry began with
at produced
Fuel Un
d year out
service
Today, in
Electric's
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Reprinted from AUGUST 1943
fueloil & oil heat
WEBSTER ELECTRIC COMPANY, Racine, Wisconsin, U. S. A., Established 1909. Export Dept.: 13 E. 40th St., New York (16), N. Y. Cable Address: "ARLAB" New York City

Illustration on left shows the Webster "Q" Fuel unit. We picture above the rest of the Webster products which we Stock—Rebuild and Make ADVANCE REPLACEMENTS New and Reconditioned.

SID HARVEY, Inc.

is proud to be one of the first

WEBSTER ELECTRIC

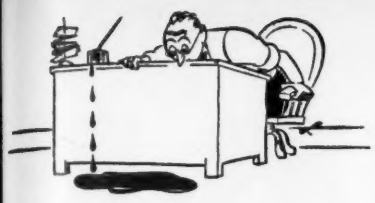
Authorized Service Stations

This Webster "ad" reprinted at left shows only one of our 75 employees. We invite you to visit us at Valley Stream to meet the rest of our gang, and inspect the best equipped shop in the oil burner industry devoted exclusivly to reconditioning of all kinds of pumps, fuel units, valves, controls and motors.

YOUR GENERAL HEADQUARTERS FOR SERVICE PARTS

SPECIALISTS IN PARTS AND REBUILDING SERVICE FOR ALL MAKES OF OIL BURNERS - - - - - - - SINCE 1931

SID HARVEY INC.
VALLEY STREAM, NEW YORK



Editorial leaks

Overconsumption of fueloil by domestic users seems to have been a source of considerable excitement, though the total gallonage involved seems to have been far less than the noise would indicate. A user whose tank is empty and has no valid coupons becomes excited, and with good reason. Five percent of such customers can make a dealer feel that all his customers are in difficulty.

Whether or not it is the dealer's duty to police customers' oil use is debatable, but those who have taken that duty upon themselves have avoided much of the trouble that has fallen on others. Users will do something about overconsumption if they know about it in time.

Customers who are completely out of oil and valid coupons on February 8 have overconsumed their ration by 22%. If they are in that predicament before February 8, the percentage of overconsumption is greater. Such overuse of oil cannot be accounted for by any proportionate change in the weather, and it is hard to believe that Junior's cold would have been that serious. If so, there is provision for the customer to get more oil.

Psychologically there are better and more likely explanations. There has been less publicity about short oil supply this season, though the supply situation is but little better han last year. Then, too, the greater gallonage in definite value coupons, and the overlapping validity of period coupons allowed larger drops so that users appeared to be getting more oil, and were less careful.

From an operating point of view these larger drops and improved delivery practice are most desirable. Better operating practice was built into the program this year at the expense of tighter rationing control. It does not have to stay in the 1944-45 program if experience proves the better delivery operation relaxes control to the extent that overconsumption becomes serious. This may be sufficient reason for oil dealers to give even more thought to the customers' present oil use, and to discourage any easing of the vigilance with which most customers watched their consumption last season.

◈

An old woman of our acquaintance often sagely observed that, "The longer you live, the more you find, By Golly, out." Our glib handling of the jargon of the business got a severe jolt the other day from an informed and intelligent former member of the industry. The conversation had turned to pipelines.

"Big Inch—Little Inch," he snorted. "Why are they trying to glamorize a couple of stretches of insignificant pipe by giving them names?"

We probably looked puzzled, so he continued.

"An inch is an inch, and no fancy name will stretch it or shrink it. If that Big Inch is 1⅛ or 1¼, why not say so? And call Little Inch ⅞'s or 15/16's or whatever it is."

Before we could find words to pour over our sagging jaw, he went on:

"Besides, I can't see that those little pipes squirting oil will be much help in winning a war, Ickes or no Ickes."

Maybe the public should be told!

◈

A Middlewestern oil man has made a suggestion concerning petroleum price which may point the way around present objections to a general crude rise, and still retain the incentive to discover new oil fields. In brief, he suggests that the Federal government agree to buy all crude produced from newly discovered fields, and pay a premium for it sufficient to stimulate greater wildcatting activity. This, he believes, will give all the incentive to discovery that a general crude price rise would afford, but would not affect the price civilians pay for oil from present production.

Such a plan seems to solve some of the problems, and would disguise the subsidy enough to remove some objection from that angle. There still is the unsolved problem of excessive taxes that might discourage the long-risk capital which traditionally does much of the wildcatting. This could be overcome by exempting the government premium for new oil from excess profits taxes, or otherwise adjust rates on wildcat profits to make this activity attractive once more to the local syndicate that takes long chances for big returns.

◈

Not all members of the industry have had the great good fortune to browse in the barn-like halls of the temporary buildings of Washington and savor personally the wisdom that abounds there. From a man who spends much of his time in Washington, we receive the following definitions:

Co-ordinator—a man who brings organized chaos out of regimented confusion.

Conference—a group of men who, individually, can do nothing, but as a group can meet and decide that nothing can be done.

Consultant—an ordinary man who is a long way from home.

Economist—a man who has a Phi Beta Kappa key on one end of his watch chain and no watch on the other.

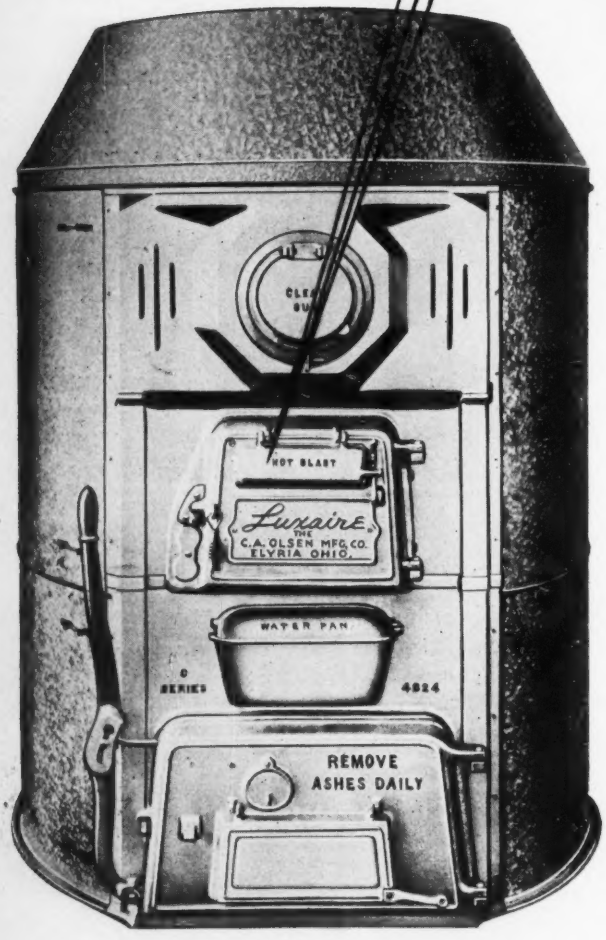
Efficiency Expert—a man who knows less about your business than you do, and gets paid more for telling you how to run it than you possibly could make out of it, even if you ran it right instead of the way he told you to.

Professor—a man whose job it is to tell students how to solve the problems of life which he, himself, has tried to avoid by becoming a professor.

Statistician—a man who draws a mathematically precise line from an unwarranted assumption to a foregone conclusion.

Mrs. W. A. Matheson *of Bloomington, Ill., and sailfish (left) which she caught on a recent trip off Fort Lauderdale, Fla. Mr. Matheson (right), who also fished, was out in the fresh air all day, and enjoyed the ride.*

LUXAIRE



Series C

DESIGNED FOR THE JOB • • • • BUILT FOR THE YEARS

Being prepared to "deliver the goods" will be the position of the C. A. Olsen plant at Elyria, Ohio, manufacturers of LUXAIRE warm air heating and air conditioning units, when the nation's job and our job of producing war materials is complete.

The Luxaire plant is now more than double its original size.

The demands of the armament program have necessitated the addition to the Luxaire manufacturing facilities of much modern, heavier, speedier machinery — machinery that is adapted to the production of furnaces and air conditioning units.

As Luxaire met the requirements of war, also it is ready to meet the requirements of peace.

Designed for the Job, Built for the Years, the complete Luxaire line of coal . . . gas . . . oil furnace equipment will be ready, when the time comes, to take its place again as a leader in the warm air heating industry.

BUY MORE WAR BONDS AND STAMPS

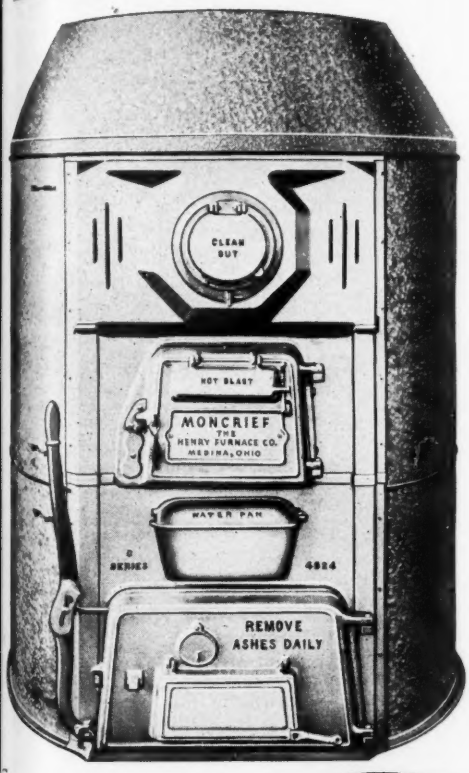
Luxaire

WARM AIR FURNACES . . . AIR CONDITIONING UNITS . . . COAL . . . GAS . . . OIL

THE C. A. OLSEN MANUFACTURING CO. ELYRIA, OHIO

Moncrief says—

LET'S LOOK AT THE PAST . . . FOR THE FUTURE



MONCRIEF furnaces are backed by the "know how" of almost 50 years experience in the manufacture of heating equipment. Their design is proven . . . Their construction is sound.

The MONCRIEF policy for the past half century has been to give the buying public the biggest dollar value possible.

In the belief that history repeats itself, look to MONCRIEF to continue in its position of leadership in Warm Air Heating equipment—in furnaces and air conditioning units for all kinds of fuel, also in warm air pipe and fittings.

In belief that history repeats itself, look to MONCRIEF for advanced design, modern appearance, superior construction.

For MONCRIEF will spare no effort or expense in improving and expanding its plant, plant equipment and manufacturing facilities to the end that its past reputation for excellent productcs will be maintained and enhanced in the future.

Series C COAL BURNING HAND FIRED FURNACE

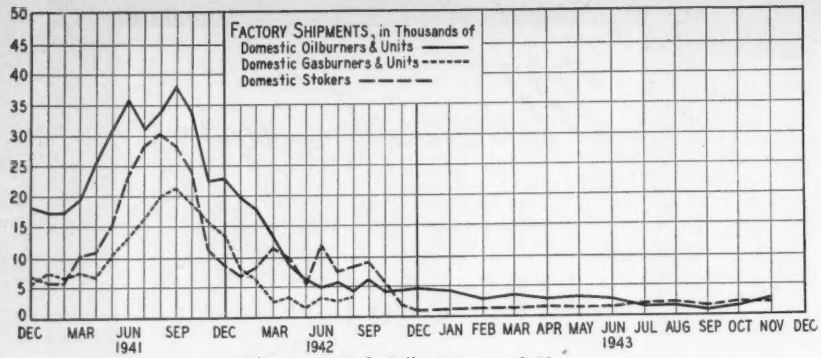
MONCRIEF
SINCE 1895

WARM AIR FURNACES
FURNACE PIPE and FITTINGS

AIR CONDITIONING SYSTEMS
FOR COAL . . . . GAS . . . . OIL

THE HENRY FURNACE CO. **MEDINA, OHIO**

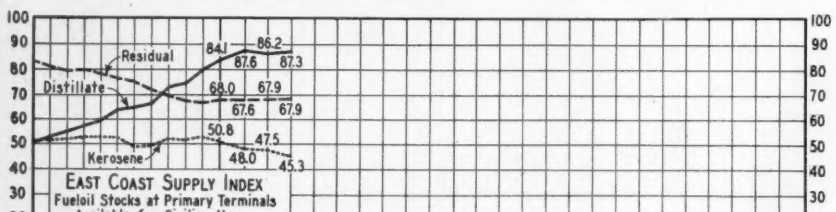
fueloil & oil heat


FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units
Domestic Gasburners & Units
Domestic Stokers
DEC MAR JUN SEP DEC MAR JUN SEP DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1941 1942 1943

Shipments of Oilburners and Units

Adjusted to include manufacturers other than the 137 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	NOVEMBER			ELEVEN MONTHS		
	1943	1942	Percent Change	1943	1942	Percent Change
Conversion	2,223	2,428	— 8.4	16,086	66,992	—74.9
Boiler units	216	560	—61.5	6,238	9,319	—33.0
Furnace units	238	1,201	—80.2	5,174	18,190	—71.8
All domestic	2,677	4,189	—36.2	27,498	94,591	—71.0
Commercial	7,688	5,086	+51.2	46,028	54,900	—16.2
Total	10,365	9,275	+11.8	73,526	149,851	—50.9



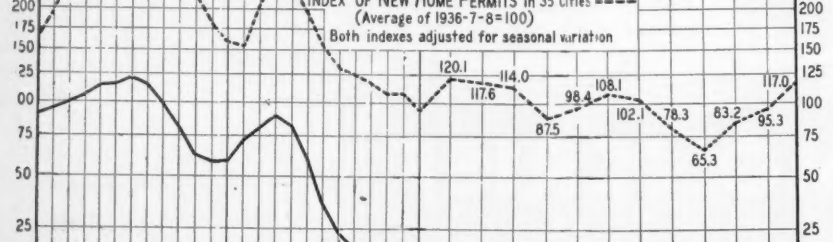
December Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS		BOILER-BURNERS		FURNACE-BURNERS	
	Top price*	Low price	Top price*	Low price	Top price*	Low price
Highest	$338	$198	$645	$395	$715	$395
Lowest	210	165	400	356	400	295
Dec. Aver.	265	182	498	376	486	351
Nov. Aver.	263	185	518	383	506	356

*Top price key dealers for conversion burners are those whose minimum retail prices are $200 or more; for boiler-burner and furnace-burner units (exclusive of ductwork) those whose minimums are $400 or over.

Price Index: Conversion Burners: Jan. 1940 is 100%

	WHOLESALE				RETAIL			
December	105.0	Six months ago	104.2	December	110.0	Six months ago	110.0
November	104.8	Year ago	105.6	November	109.6	Year ago	109.1



Oilheating Trends

ENDING THE YEAR with a continued up-trend in the sale of replacement oilburners December installations of domestic burners and units were 1,682, showing a drop of only 19% from the same month of the previous year. This is the most favorable comparison, percentagewise, since new installations were stopped in the Spring of 1942. There is strong probability that January burner sales will show a plus comparison with January 1943. Key dealers reporting for December actually sold more burners, by 8%, than the year before, but permits from 40 reporting cities were off 46.1%, indicating that in making replacement installations, getting permits is often bypassed. December installations of 1,682 compare with November 1,369, October 1, 248, and September 510, a complete reversal of peacetime seasonal sales patterns.

With the new revision of WPB's L-74, permitting replacements without having to get prior clearance if the burner is over 10 years old, or worn out beyond repair, it is evident that dealers will be able to sell as many burners as they can get ahold of. Each dealer was asked this month how many such replacements he believes he can sell in 1944 if he can get the burners. The composite answer is 6.6% of present service customers. Applied to national totals that percentage would indicate that customers would buy this year 157,476 replacement burners.

The highest replacement sales in peacetime were 56,315 in 1941. If, considering the increasing average age of burners, that figure could be considered as minimum normal replacement requirement, there is a large replacement deficit, due to so few being made in 1942 and 1943, when burners could not be had for the purpose. In the January issue of FUELOIL & OIL HEAT it was shown that if the 1941 replacement rate were to be accepted as normal requirements, it would be necessary in 1944 to replace 121,865 burners to catch up the deficits of 1942 and 1943.

If materials can be made available, without retarding the war effort, it would be advisable to make that many replacements for their oil-saving value, not to mention the more satisfactory operation for the users.

BURNER STOCKS: While no check was made this month of dealer stocks of oo-

mestic burners and units, they are apparently about 12,000, since on December 1 they were approximately 13,000. Factory stocks at the end of November, the latest available figures, were 34,254, divided: conversion burners 16,157, boiler-burner units 9,486, and furnace-burner units 8,611. At the start of November they had been 34,629. Factory shipments during November were 2,677, indicating new production of 2,302.

BURNER PRICES: Both the wholesale and retail indexes showed a fractional rise in December, but there has been no significant change compared with six months and a year ago. The individual product price tables show more fluctuation, but are less accurate than the index, since they apply to all dealers reporting, some of whom do not report every month. The index is based on a specific group that reports consistently.

SERVICE INCOME: December service department income of reporting dealers averaged $2,177, up 55.1% over the average of $1,403 for the same dealers in December 1942. This is the largest percentage increase reported during the year, and no doubt is caused by enlarged replacement burner sales. Dealers no longer have equipment sales staffs, so burner replacements are sold by service men.

FUELOIL BAIL-OUT: Because so few fuel-oil distributors have taken advantage of OPA's offer to put them back in coupon and stock balance by using Form 1120, it was decided to check the number again this month. In the reports sent in around December tenth, 13% said they had filed the form. A review of their thinking and reasons for not filing were in the last issue. This month, however, the percentage has grown. As of January 10th, 22.7% of those reporting had filed the form. Of those who filed, three-fifths have been put back in balance by OPA and two-fifths have not. The OPA order setting up the procedure limited the filing period to 60 days, November 1 to January 1, so there will probably not be many more filed, although the order does say that 1120 may be filed after the expiration date if good cause is shown for the delay. The "good cause" probably won't have to be too specific.

FUELOIL STOCKS: Stocks in distributors' bulk tanks on January 1, 1944 were above the same date a year previous. The increases were:

	District I	*District II*
Kerosene	+ 4.1%	+ 1.8%
Distillate	+ 4.2	+ 3.0
Residual	+14.0	+ 3.7

Most reporting distributors were within fairly close range of the averages, but a few had stocks as much as 50% higher and one large distributor with a tide-water plant showed distillate stocks 40% lower.

No check was made of consumer stocks, but it is probably safe to assume that they were a little above last year. The new rationing program, with inventory and change-making coupons representing a third of the average ration, has made possible larger average drops with few if any small bob-tail deliveries this early in the season.

OVERCONSUMPTION: Too liberal use of rations to date has worried segments of the industry and Washington officials, and obviously many people have burned oil pretty freely, but the overall impact does not appear to have reached the critical stage.

Total central-heating consumers served by reporting distributors in District I number 136,430 . . . a generous sample and probably representative. Of these, say the distributors, 13.2% have serious-

(*Continued on page 56*)

Oilburner* and Building Permits

OILBURNERS					DWELLINGS			
December		12 MONTHS			*December*		12 MONTHS	
1943	*1942*	*1943*	*1942*		*1943*	*1942*	*1943*	*1942*
0	0	0	10	Albany, New York	..	..	..	..
..	..	..	..	Baltimore, Maryland	100	99	1211	1425
..	..	..	..	Binghamton, New York	1	5	1	20
..	..	..	..	Bloomfield, N. J.	1	0	2	118
31	92	..	946	Boston, Massachusetts	0	20	23	198
..	..	..	..	Des Moines, Iowa	0	0	11	531
..	..	..	..	Detroit, Michigan	366	325	4878	7613
2	0	9	52	Elizabeth, N. J.	0	0	54	19
5	0	15	55	Freeport, New York	..	..	..	..
..	..	..	..	Greenwich, Conn.	0	0	3	23
..	..	..	..	Hackensack, N. J.	0	0	0	40
3	3	..	376	Hartford, Conn.	..	..	..	..
4	3	35	402	Hudson County, N. J.	..	..	..	..
0	0	2	51	Irvington, N. J.	0	0	13	38
..	..	..	..	Lynn, Massachusetts	0	0	2	27
3	1	10	199	Milwaukee, Wisc.	47	23	451	673
15	14	107	368	Minneapolis, Minn.	0	1	3	377
1	0	..	..	Montclair, N. J.	..	..	..	..
..	..	..	..	Morristown, N. J.	0	0	0	6
4	3	28	86	Mt. Vernon, New York	..	..	..	..
11	4	39	182	Newark, New Jersey	..	..	..	..
1	0	6	72	New Haven, Conn.	..	..	..	..
0	2	7	32	New Orleans, La.	..	..	..	..
0	0	2	47	New Rochelle, N. Y.	0	0	0	19
7	3	62	740	Manhattan, Bronx, Rchd.	..	..	..	..
2	128	155	1271	Norfolk, Virginia	0	56	183	1178
1	1	10	22	Oakland, Calif.	..	..	..	..
6	2	59	274	Omaha, Nebraska	15	0	114	298
0	0	1	23	Orange, New Jersey	0	0	2	14
2	0	6	32	Passaic, New Jersey	..	..	..	..
1	0	9	44	Paterson, N. J.	0	4	32	45
..	..	..	..	Plainfield, N. J.	0	0	18	52
1	0	8	67	Portland, Maine	0	1	60	111
7	0	70	994	Portland, Oregon	190	346	1700	2275
3	3	8	204	Providence, R. I.	0	0	0	40
..	..	.	..	Reading, Penna.	0	0	0	8
0	0	1	83	Richmond, Virginia	0	9	33	367
0	16	5	203	Rochester, N. Y.	..	..	..	..
3	0	10	61	Rockville Center, N. Y.	0	0	1	14
19	0	24	19	Salem, Massachusetts	..	..	..	..
2	2	57	335	St. Louis, Missouri	0	1	39	358
4	7	11	403	St. Paul, Minnesota	0	0	4	200
1	0	19	244	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Washington	192	72	..	..
..	..	..	..	Springfield, Mass.	14	6	286	506
2	0	10	54	Stamford, Conn.	..	..	..	..
..	..	..	..	Syracuse, New York	4	15	..	..
..	..	..	..	Trenton, New Jersey	24	0	207	2
1	7	37	892	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	0	0	0	23
7	4	40	70	White Plains, N. Y.	0	0	0	3
2	0	6	108	Wilmington, Delaware	16	4	534	17
11	2	49	223	Worcester, Mass.	..	..	..	..
3	9	..	..	Yonkers, New York	..	..	..	..
165	306	917	8298	*Totals*	970	987	9865	16638
—46.1	..	—89.1	..	*Percent Change*	—1.7	..	—40.7	..

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

AIR

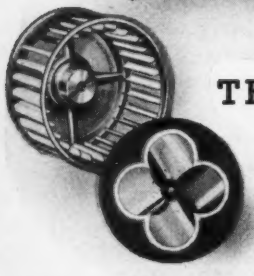
THE VITAL FACTOR IN *COMBUSTION*

OIL must have air for combustion. In pressure type oil burners a centrifugal blower wheel is often looked upon as the single element in attaining a proper air supply. Its complement, the housing, without which the wheel is ineffective, is not given proper consideration.

With proper emphasis upon correct scroll design, cut-off and air inlet proportions *in the early stages of design*, one's choice narrows rapidly to one wheel that gives the desired performance, at the lowest cost for itself, its motor and housing.

Since there is but one best combination of housing dimensions for any specific wheel, how is it found? One good method is by consultation with Torrington's Research Laboratory, specialists in air delivery. There is no charge for this service.

OIL BURNER SPECIFICATIONS
Four factors determine the correct selection of a blower wheel:
C. F. M.
Static Pressure
R. P. M.
Horsepower (fan only)
Consult the Torrington Manufacturing Company for free help on the nineteen dimensions necessary to form the correct cast metal housing.
AIROTOR
Blower Wheels
QUIET • STURDY
EFFICIENT
A better wheel at a lower price



THE TORRINGTON
MANUFACTURING COMPANY, TORRINGTON, CONN.

Air Impellers for Every Purpose

Back from the War!

Tankless Water Heaters are the simplest, most economical. Only General Fittings Co. offers a complete line!

INDIRECT WATER HEATERS—

the most efficient, economical systems . . . again available for homes and industries

With the recent lifting of certain WPB restrictions, top-quality indirect water heaters developed by General Fittings Company are again available for homes and industries, as well as war-applications!

Again, these leading heaters offer you the most efficient type of water heating . . . speedy, space-saving, economical to install and operate. Further, new wartime advances in design have been applied to make the GENERAL line even broader and more efficient than before!

Write today for complete Catalog No. 15. General Fittings Company, 125 Georgia Avenue, Providence, Rhode Island.

GENERAL

WATER HEATERS AND HEATING SPECIALTIES

GENERAL

QUALITY PRODUCTS

Tankless and Tank-Type Water Heaters for Industrial Plants — Apartment Houses — Homes.

Thermostatic Mixing Valves

Water-hammer Silencers

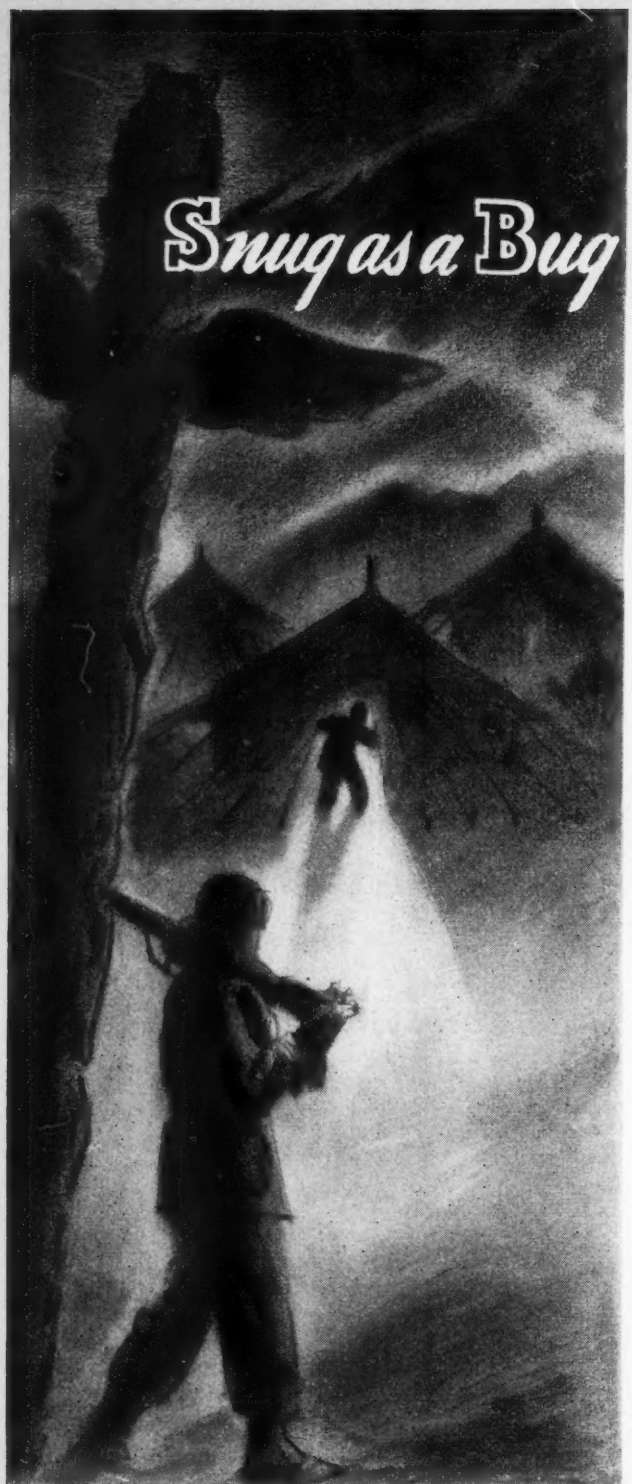
Built-in Water Heaters for Boilers

Coil-heated Tanks

Live-steam Heaters

Pipe Unions

fuel oil & oil heat



Snug as a Bug in a Rug..

IN SPITE of bitter cold and biting wind in some of our Arctic outposts, our fighting men can still keep warm. Just inside the tent flap is warmth that defies the elements and brings comfort and relaxation when long watches are over.

All over the world, wherever our fighting men are stationed, will be found tent heaters, water heaters and cooking ranges equipped with "DL" Float Valves.

Reliability of operation and ease of cleaning and servicing make "DL" Float Valves in demand by manufacturers of this type of equipment.

When oil burning equipment again appears on the market, make sure the line you select is equipped with "DL" products.

DETROIT LUBRICATOR COMPANY *General Offices:* **DETROIT 8, MICHIGAN**

Division of American Radiator and "Standard" Sanitary Corporation

Canadian Representatives—RAILWAY AND ENGINEERING SPECIALTIES LIMITED, MONTREAL, TORONTO, WINNIPEG

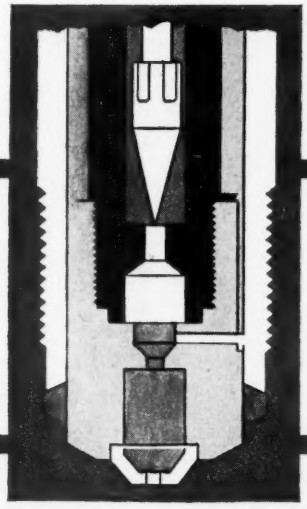
"DL" Heating and Refrigeration Controls • Engine Safety Controls • Safety Float Valves and Oil Burner Accessories • Radiator Valves and Balancing Fittings • Arco-Detroit Air and Vent Valves • "Detroit" Expansion Valves and Refrigeration Accessories • Air Filters • Stationary and Locomotive Lubricators

The G-E "plus" for G-E dealers, in tomorrow's heating boom . . .

GENERAL ELECTRIC's years of research, coupled with a wealth of wartime engineering experience, may prove a *decisive* sales advantage for distributors of G-E Automatic Heating equipment in the postwar years.

The fact that the General Electric trade-mark is known and respected throughout industry and in practically every American home is largely due to just one reason — that, over the years, G-E has had the *mind* for research, and the *facilities* for research.

So when Peace returns, the value of this cumulative research, plus the new knowledge born of war, will be reflected in improved General Electric heating and cooling units . . . pace-setters in engineering advancement, in consumer demand, and in dealer sales and profit opportunity. Now is none too soon to plan your own tie-up with this development. *General Electric Company, Heating Division, Section 4482, Bloomfield, New Jersey.*



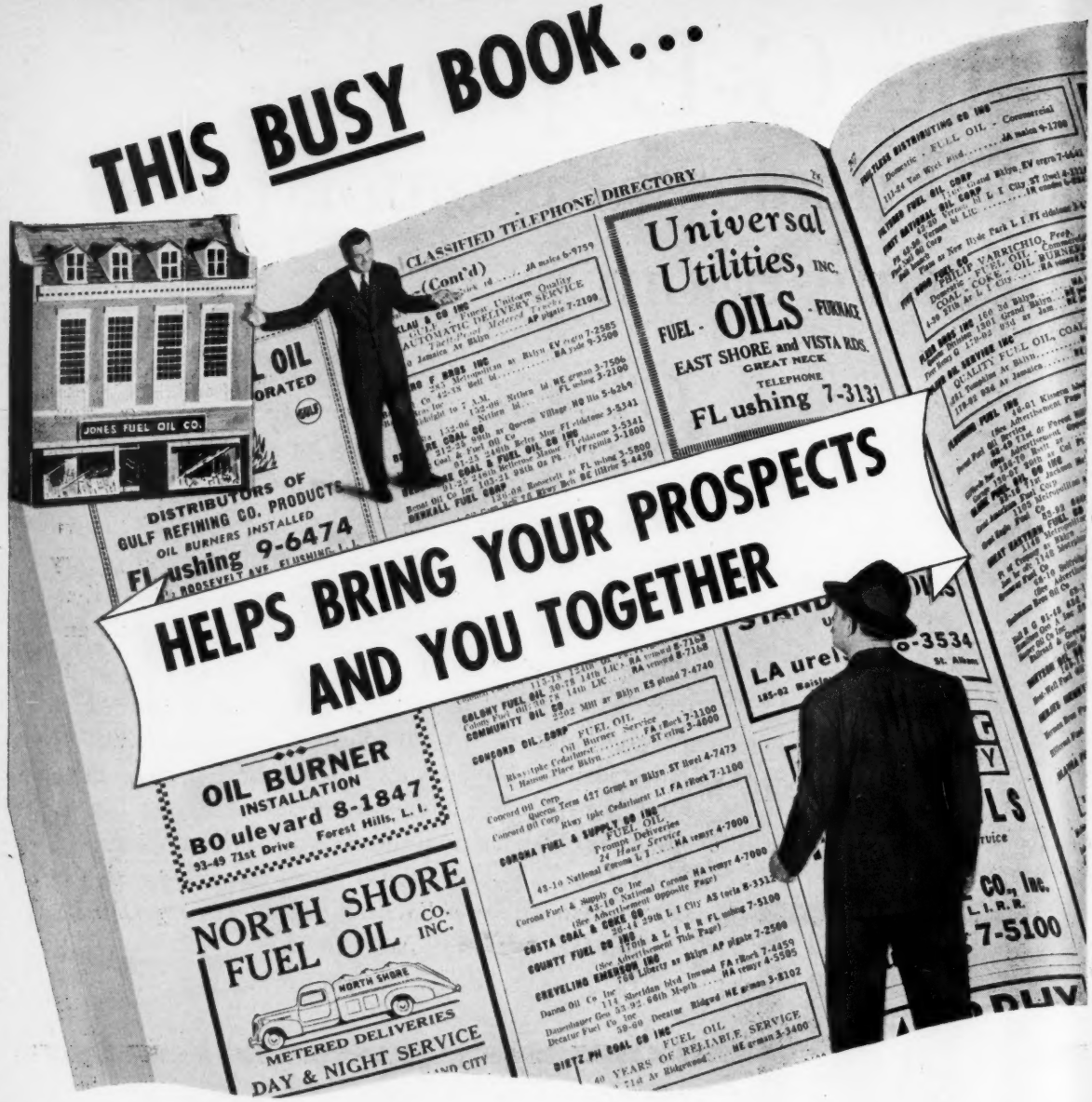
THE DOUBLE-MIX NOZZLE—an outstanding research development, identified with pre-war G-E heating units, which provides amazingly fine atomization of fuel oil and assures clean, rapid, complete and efficient combustion. Out of *today's* research will come important *new* sales features to distinguish the General Electric heating equipment of tomorrow . . . and to offer new opportunities to its distributors.

☆ BUY WAR BONDS ☆

GENERAL ELECTRIC

Hear the General Electric Radio Programs: The "G-E ALL-GIRL ORCHESTRA," Sundays, 10 p. m., E W T, NBC..."THE WORLD TODAY" News, Every Weekday 6:45 p. m., E W T, CBS

fueloil & oil heat



Today more than ever, the home owners in your community look in the Classified section of the telephone directory for information on where to get service for their oil burners and heating systems.

With heating systems needing regular care and repair—for economy of operation and longer use—the Classified offers you an opportunity to get more of this business.

By advertising under various classifications in your telephone directory, you can tell home owners about the different services you render—the grades of oil you handle, if you give day, night and Sunday service, etc. Then you put them on the right track to your door.

Why not have a Directory Representative give you some proven pointers that can make your advertising in the Classified more effective? It's good business now and for postwar. Call the business office of your local telephone company.

Ever since the beginning of the war, Silent Glow's efforts have been directed toward the quantity production of precision instruments for use by our Armed Forces. Typical of this work has been our manufacture of intricate mechanisms for the 30 cal. carbine, an important part of a paratrooper's equipment.

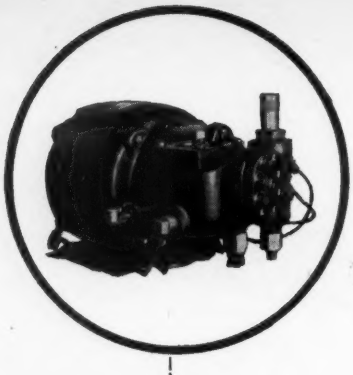
Silent Glow was well prepared for its present task by the years devoted to manufacturing machines of unerring accuracy and craftsmanship. By the same token, our experience in producing for victory will enable us to return to peacetime manufacture with a wealth of skill and knowledge.

SILENT GLOW OIL BURNER

BACK THE ATTACK WITH WAR BONDS

THE SILENT GLOW OIL BURNER CORPORATION, HARTFORD, CONNECTICUT

*SPECIAL MOTORS DESIGNED TO FIT THE APPLICATION



EXTREME QUIETNESS AND LONG LIFE

If operating conditions were always the same . . . if there were no differences in types and sizes of the product — there would be no need for special motors. But we know that variables do occur in equipment, such as oil burners, and other electric motor operated apparatus, which require specially designed motors to meet specific performance requirements of compactness, quietness, overload protection and long life. Holtzer-Cabot special motors are meeting the operating conditions in various types of equipment.

Holtzer-Cabot has concentrated its energies in the specialized business of designing and building special fractional HP motors for every purpose. Our engineers, backed by 68 years of motor design, can help you with your motor problems.

THE HOLTZER-CABOT ELECTRIC COMPANY

Designers and Builders of Special Fractional HP Motors and Electrical Apparatus

129 AMORY STREET, BOSTON, MASS. CHICAGO, ILL., NEW YORK, N. Y., PHILADELPHIA, PA.

Policing Consumption

Two Fueloil Distributors Go All the Way, and It Works

By
Robert Gray

When in early January it became clear that many people were burning fueloil at faster than their rationed rate, numerous studies were made by interested groups and agencies to measure the extent of the overconsumption. Some of the results are related in the "Oilheating Trends" department of this issue.

Of all the companies disclosing their overconsumption experiences to FUELOIL & OIL HEAT, *two stood out with exceptional records. While each had slight overconsumption, they had much more underconsumption. The two distributors are Robison Oil Co., Inc., Hartsdale, N. Y., and Modern Heat & Fuel Co., Philadelphia. This is the story of how they did it.*

ALL INDUSTRIES today are called on to make unending contributions of time and effort to help the armed forces, the Government agencies and consumers through the maze of organized insanity that is called war. Almost no industry, however, has faced its problems as realistically, taken its losses in as good spirit, nor cooperated as wholeheartedly with Government, as has the group known as fueloil distributors.

Struggling under the increased overhead expense ratios that came with a 25-30% cut in volume, they have yet been willing to spend large sums on consumer education to show them how to get the most comfort from the least fuel, and at the same time to help, as partners of Government, to insure the success of the rationing program.

The greatly expanded volume of literature, personal letters, check charts and other mailing pieces sent out by fueloil men in the past two seasons to steer consumers through difficult days has contributed largely to the present paper shortage. Nearly all fueloil distributors of consequence have been vigorous in this activity, and the cumulative result of their efforts has saved a lot of oil.

Strangely, though, some of the companies that have done the most outstanding educational jobs still have too high a percentage of their people overconsuming. Studying some of their systems, in comparison with the two systems analyzed in this story, the answer seems to be that taking the final step of telling the customer exactly how he stands after each delivery means everything in results.

In the case of Herb (H.M.) Spade, oilheating division manager for Robison Oil, taking that last step is so common to his long-time business methods that he didn't recognize it as anything special. Spade has been so habitually "plus" in all of his oilheating activities that this is the third time in five years that some phase of his business has been described in this publication. The first was a story of his success with home insulation, the second on his service management methods.

Pre-ration planning

Typical of Spade's long-range thinking is what he did away back in September 1942 when rationing was about to start. Knowing that the rationing formula was to be based on a combination of floor area and consumption in a base period, June 1, 1941 to May 31, 1942, he was concerned about what his customers would put down on their applications for their past consumption. He suspected that most would show their consumption at the same figure as their purchases during the period, and a study of ration applications in any local board will show that most did just that.

Actually, as Spade recalled at the time, and as many people have since remembered, most consumers in that base period burned considerably more oil than they bought, due to an unusual combination of circumstances.

In the Winter and Spring of 1941 tankers were being sunk rather freely in various parts of the world. Several American tankers had been changed to Panama registry and departed to help the British. Negotiations were under way to lend the British another sizable group of tankers and the public was for the first time becoming aware of an impending supply problem. Tanker rates went from around 30¢ up to 57¢ per barrel for the Gulf to East Coast haul. Prices did not rise sharply because stocks were high, but they did start inching up fractional points in both April and May. Most fueloil distributors urged their customers to fill their tanks in May, and the majority apparently did, to be that much ahead of the supply game and a probable serious price rise.

But in the Spring of 1942, Recommendation 33 had been issued by the Petroleum Coordinator, limiting the size of drops and the industry was badly confused over its first straitjacket. Its merchandising psychology was deflated and moreover there was no good reason to urge consumers to end the season with a full tank, so they weren't urged, and few did.

Spade remembered all of this and knew that many of his customers would get the wrong ration unless he was alert. So instead of giving them only the conventional statement of purchases in the base period to file with their ration applications, he also gave them the exact amount they consumed and the inventory position of their tanks on October 1.

That last factor was very important, as it later proved. In the unavoidable pressure and confusion of getting millions of rations issued by volunteer workers in a few short weeks, some shortcuts were

taken that often did the consumer an injustice. The program assumed that tanks were filled on October 1. OPA field men instructed boards to deduct from each applicant's ration 250 gallons as inventory, if he had a 275-gallon tank, regardless of the inventory amount shown.

Spade had been able to fill only 45% of his tanks in the September 15-October 1 period, but the boards in Westchester County, where all of his business is done, accepted his certifications on all points. As a result, he believes that practically all of his customers got the correct ration, with the exception of a few cases of processing errors, which have been subsequently corrected.

It is Spade's belief that not more than 50% of all rations outstanding are exactly in accordance with Ration Order 11, and that this is one of the contributing causes to apparent overconsumption. Much of the error percentage is the consumer's fault, for failing to include closets and halls in his floor space, for assuming his base period consumption was the same as his purchases, etc.

Each time the company has made a mailing to its consumers—such as announcing the new program, asking for automatic delivery agreements, sending consumption check-charts, etc.—it has never omitted a statement that Robison will carefully watch consumption and notify them the minute they are getting out of bounds. After each delivery, consumption is checked against ration, and if it's running over, the customer gets a card telling just how much he's out.

When it's only a small amount, the next delivery often finds him back on the beam. At mid-season, or around January 20, only 165 out of Spade's 2,340 customers were in an excess consumption condition, and only two of those were so badly overconsumed that they would run out of both valid coupons and oil before February 8, the start of Period 4.

The automatic delivery operators checked through all of the cards, and taking the delivery nearest the mid-season date on each found:

No. of Customers Overconsumed	*Percent of Overconsumption*
77	1 to 5%
62	5 to 10
21	10 to 15
3	15 to 20
2	over 20
165	Average 6.3%

When the gallonage involved in that overconsumption is spread over all of Spade's 2,340 customers, it amounts to only 44/100 of 1% of all oil delivered.

Now, what about those who used less than their ration permitted? It was too big a job to calculate, because of their large number, but everyone at Robison Oil knows that their underconsumption greatly exceeds any overconsumption. In fact, the company's total fueloil gallonage delivered for heating to the middle of January is nine percent less than in the same period last season, and the number of customers is about the same. There could be a number of contributing factors, but definitely underconsumption accounts for most of this drop.

"K Check" System

To most men, the job of calculating and notifying each customer when he's out of bounds, and how much, sounds like a stiff undertaking . . . and so it would be, but Spade found a short-cut. First, his men calculated a "Ration K" (degree-days per gallon) factor for each consumer. Then, after each delivery there is a "K" check covering the consumption since the last delivery. This is very quickly determined with a Degree-Dayometer.

Whenever the "K" check is lower than the "Ration K," the card is laid aside to figure the percentage of overconsumption, and the customer sent a card the same day telling him the exact percentage.

On the next page is a cut-away section of Spade's automatic delivery control card, which incidentally is about as simple as could be designed, and near the center of the card is seen the "K Check" column.

An indication that the system is not particularly burdensome is the fact that it is operated by two men.

Lack of space prevents illustrating the four highly interesting consumer mailing pieces sent out since Summer, but they all contributed to the success of the program. In general they are somewhat similar to what other distributors have used, with the one big difference that each carries a statement saying, in effect, that the customer will be rapped on the knuckles if he tries to get too cozy.

Contrasted to the Spade-Robison system, the control methods used by Modern Heat and Fuel Co., Philadelphia, ignore degree-days, once the system is started.

The company, long a leading fueloil and oilburner outlet in the Quaker City, has a reputation for having developed a number of ingenious methods and facilities for better conducting an oilheating business. Its senior officers are H. D. Marks and Robert H. Fleisher; junior are George H. Clement and George Fleisher. Clement is, without question, an outstanding mathematician and system designer. In the days before rationing, he developed and patented a strange looking mechanical device for automatic delivery control that could do almost everything except collect the money for the oil.

Came rationing, and Modern Heat believed it should abandon degree-day methods for the duration, since ration periods are tied to degree-days only in a general way, while they are very specifically tied to dates on the calendar.

From last winter's experience, particularly, with a colder-than-normal season, and yet with coupon values cut in two periods because of supply scarcity, they felt that they could do much better with a system designed to compensate the vagaries of rationing.

So Clement wrapped up his peace-time gadget, put it in dry storage and set about designing another calculator.

What he wanted was a mechanical device that would compensate these four factors: Original ration, any additional ration given the consumer during the season, any changes in coupon values, any degree of under or overconsumption. In time for this season's deliveries, he had it. It's relatively simple now, when it's demonstrated and you understand it, but the heavy thought and midnight oil and brain fag that must have gone into its development are the first things that come to mind as you study it.

PAGE OPPOSITE

Upper left. *When rationing started in 1942, Spade supplied this certification for customers to turn in with ration applications. It went beyond OPA requirements, giving four figures instead of one.*

Lower left. *This card tells when ration rate is being exceeded.*

Right. *Cut-off section of Robison's control card for automatic deliveries, showing "K Check" at center. Left margin of part cut off had customer name and other detail.*

E. ROBISON, INC. *"The House That Service Built"*

HARTSDALE, N.Y.

CERTIFICATION OF FUEL OIL PURCHASES

This is to certify to the office of Price Administration that we sold to

Henry A. Jackson
412 Oaklawn Ave
White Plains, N.Y.

a total of 2,180 gallons of No.2 grade fuel oil during the twelve months ended May 31st, 1942, and our records so indicate.

E. ROBISON, Inc.

Mgr., Oil Heating Department

Our delivery and degree day records make it possible for us to estimate very accurately the amount of oil in our customers' tanks at any given time. From these records we are pleased to furnish the following information.

Actual gallons of fuel oil consumed from June 1, 1941 to May 31, 1942 (available only if our records indicate that the above customer occupied the present premises and that we supplied all the fuel oil used, during the entire period.)

2,320 Gallons

Gallons of oil in the tank on October 1, 1942: 85 Gallons. (If this amount is less than 250 gallons, we hereby certify to the O.P.A. that, due to conditions beyond our control, we were unable to deliver oil to this customer between September 15, 1942 and October 1, 1942.)

Gallons of oil delivered between October 1, 1942 and Nov.1,1942 (If oil is delivered between the latter date and the time this application is filed, the quantity should be added to the following amount.) 200 Gallons

E. ROBISON, Inc.

E. ROBISON, Inc.

HARTSDALE, NEW YORK

The House That SERVICE Built

DEAR FUEL OIL CUSTOMER:

We recently delivered oil and after checking your consumption from October 1st, 1942, to the date of the delivery, find that during this time your rate of consumption was approximately 4 % faster than your ration permitted.

This estimate is determined by comparing the percentage of your total ration which you have used to date, with the percentage of a normal total heating season which has elapsed since October 1st, 1943. If you continue your present rate of consumption, and if the season ends with a normal total amount of coldness, you will be short of oil for the season, to the extent of about the above percentage of your total ration.

It might help you to know that for each degree you lower your thermostat setting your consumption will be reduced approximately 3% during the time it is lowered.

Very truly yours,

Date November 25

Oil Heating Department

Normal K 1.9 | Gals. Tolerance 75 | Date Rec'd 8/10/44 | Class Coupons 5 | Par. V Rat. 2000 | RATION K 2.5

Date	Before	GALLONS Del'd	After Tolerance	Bal. to Be Used	K Ck	D D to Go D D Today	Del. at D D Total	REMARKS
9/1	50	200	250 / 75	175		440 / 0	440	
11/1	60	200	260 / 75	185	2.3	460 / 420	880	over 8%
11/25	85	180	265 / 75	190	2.4	875 / 490	1365	over 4%
12/15	75	190	265 / 75	190	2.5	475 / 1395	1870	✓

	1	2	3	4	5	CAL
	30	30	30	30	30	200
	10	10	10			300
	300	300	300			500
	200					
	100					100
	100					400
	0					180
		150				220
		150				40
						180

PHONE:

☐ S & W — ☐ W — ☐ NO

BURNER

TYPE

fueloil & oil heat

New Ration Gallons	2000	Tank Inventory	+ 260
Carry Over (Valid coupons past season)	+ 100	Total Oil Available	2160
Total available gallons in coupons	2100	Usable Oil in Tank (Contents, less reserve)	− 75
Initial Delivery	− 200	Balance	2085
Total Available oil less Tank Inventory	1900	Key Number of Letter	2100

DATE	GALS. DEL'D	BALANCE	DATE OF NEXT DEL.	COUPONS	CREDIT	NET PERIOD BALANCE	NET PERIOD BALANCE CONT'D
		2085	Oct 3	Change	200	700	
Oct 4	200	1985	Oct 31	Reserve	300	500	
Nov 3	200	1785	Nov 25	Period No. 1	300	300	
Nov 20	240	1535	Dec 17	Period No. 2	300	60	
				Period No. 3	300		
				Period No. 4	300		
				Period No. 5	300		
				Type 5			
				Par Value 10			
				Serial Nos.			

If the customer gets more coupons, or if coupon values are cut, the balance figure above is raised or lowered and then the calculator sets a new series of dates.

Size Tank 275 | Reserve 75 | W. H. C. ☒ | P. U. C. ☐ | S. & W. ☐ | Index No.

Name | Address | Town | Phone

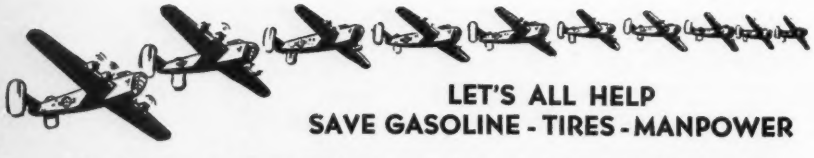
Modern Heat's *system control card. When delivery is ordered earlier than indicated in "Date of Next Delivery" column, the ration rate is apparently being exceeded.*

DEAR CUSTOMER:

Our last delivery should serve you until November 25 if you wish to remain in balance with your fuel oil allotment. On the above date your tank should be ¼ full. A card is attached for your convenience in ordering your next delivery. One of our trucks may be in your neighborhood about that time, if it stops at your home, please cooperate by accepting a delivery. (Help us conserve gasoline and tires by making certain that your tank is no more than ¼ full when you place your order).

MODERN HEAT & FUEL COMPANY
4415 Chestnut Street
Philadelphia 4, Pa.

This card *is sent after every delivery. If customer overconsumes his ration, a warning is stamped on the card. If he's using too little oil, a stamped message tells him he can afford to be more comfortable.*



LET'S ALL HELP SAVE GASOLINE - TIRES - MANPOWER

If our fuel oil users would wait until their tanks were low before ordering fuel oil, enough gasoline could be saved this winter to fly ten Heavy Bombers on a raid from England to Germany and back.
We know you want to help reduce the use of vital war materials and manpower—Here's how you CAN help:

1. Wait until your tank is down to ¼ full or less before ordering.
2. Allow your tank to be filled, each delivery, with as large an amount of oil as your ration coupons will permit. We won't have to call so often!
3. Allow deliveries to be made whether or not you are home. Nothing is more wasteful of mileage and time than a "non-delivery" stop.
4. If our truck is delivering to your neighbor, it may stop at your home, even though you have not ordered oil. Please accept the delivery.

We thank you for your cooperation.

Very truly yours,
MODERN HEAT & FUEL COMPANY
4415-19 Chestnut St., Phila., Pa.

One of a series *of educational mailing pieces designed to prevent customers asking for delivery before their tank oil level was low enough to permit an economical drop.*

Once the calculator—it's called "Oilration Calculator"—is at hand, the operation of the system is the simplest ever.

The first fundamental principle of the device is that all computation is made from the end of the season, backward, rather than from the start of the season, forward. After somebody else has thought of it, the idea seems basic in control.

Divides Balance

Suppose, for example, a man starts the season with a 1,500 gallon ration. The calculator starts spacing his deliveries on the basis of 1,500 gallons to go. By January 10th assume he has left 700 gallons. He has been burning too much, but the calculator doesn't care—it just spaces that 700 out over the balance of the season. Now suppose the consumer convinces his board that his child was ill, or maybe a new child arrived, and he gets 100 gallons additional coupons; his balance is then 800 gallons for the rest of the season, and the calculator, frigidly impersonal, just spaces out his 800. The same happens in reverse if coupon values are cut and the man loses 100 gallons.

Figures are fed into the calculator by simply turning a wheel, and the answer that comes out is not a figure but a calendar date—the date when the next drop is to be made to fit the remaining ration.

Naturally, the dates are not equally spaced. In designing the calculator, they were arranged to automatically compensate for seasonal degree days, so that a 200 gallon drop in January calls for a much shorter time lapse than in April.

On the system control card for each customer the important items are the balance of the ration and the date that the calculator has indicated. (Incidentally, the calculator always gives two dates, one if the account has Summer hot water and the other if it doesn't).

After each delivery, a card is sent to the customer telling him the date of the next delivery and that he must make the oil in his tank last until then, or he is running out of bounds.

If he must have oil before then, he has to phone in to get it. Each time the oil level in his tank approaches zero it's a minor crisis—to grab the phone or to shut off more rooms. The important psychological factor is the fact that the customer has to check himself on his consumption every few days.

The company doesn't worry him too much until he misses his dates by a week. Then the card that they send, announcing his next scheduled delivery date, carries in red a stamped notice, "WARNING—You are burning oil faster than your allotment permits."

If, on the other hand, the consumer is being too frugal, chillier than necessary, so that he misses his date a week in the other direction, he gets a stamped notice on his next card, "To date you have been very conservative. Your ration will permit your maintaining a higher thermostat setting, if you so desire."

The whole conrol system, for 3,600 heating accounts, is handled by one man. The results, measured in actual control of consumption, are not quite as dramatic as those of Spade at Robison, yet the net balance is so far on the right side as to demonstrate the high value of the system. In checking for this study, 500 consecutive cards were looked over and these were the findings:

70 of the 500 customers have overconsumed enough to be a week or more out of line. Of these, 24 will not make out without hardship ration relief.

202 are substantially in balance, being less than one week behind or ahead.

228 have underconsumed to the extent that they are a week or more ahead of the program.

Marks estimates that to mid-season the amount of oil saved by those who used too little is about two and one-half times the excessive consumption of those who used too much.

Semi-Automatic

A study of the forms used in Modern's system will show that they do not operate entirely automatically so far as making deliveries are concerned. They ask the customer to call in or send a card when he needs oil. Then they tell him that they also expect to make a drop at any time their truck is in the neighborhood, to save manpower, tires, etc.

Since the system always shows when the customer should get oil, the trucks do actually make most of the drops without the customer calling, but they feel that by making the customer watch his tank he is more conscious of the dates he has been given, and also, if he is underconsuming, the truck can make a larger drop at a later date.

Coupons Remain at Par

Coupon values for Period 4 are to remain at par in all sections of the country. This means that Period 5 values will also be par in Midwestern and Southeastern States, where the two periods have been telescoped.

The decision was a difficult one for OPA to make, for while distillate stocks at the moment are well above last season, the February and March programs have had some unforseen setbacks, and it now looks like the peak heating season will end up no better than a photo-finish on supply and demand.

This method developed one kickback. A number of people would call in and say they were about out of oil, but the driver found he could only drop 100 gallons. So Marks and Fleisher did an educational job by mail . . . one of the cards in this campaign is illustrated on page 22. The practice has now stopped, with few exceptions.

Marks and Fleisher are merchandisers; they have not tried to keep their progress secret. With a quarter-page ad in the Philadelphia classified directory they explain briefly what they do for their customers in the way of policing consumption. A surprising number of people would like to have their service, with the result that the heating customer list is now 15% larger than last season.

A significant point that should not be overlooked in this story of two companies is the fact that each is a complete oilheating firm. In addition to selling fueloil each was selling several hundred oilburners a year before the war. They now have large and profitable burner service departments. They have always seriously sold *oilheating*, instead of simply a burner or a tankful of fueloil. Their basic merchandising philosophy is that profits, either short-range or long, are made from people, not from commodities.

BRODIE METERS *Speed Up Rural Deliveries*

SAVING MANPOWER, MANHOURS & MANUAL EFFORT

With a limited number of working hours in a day—coupled with limitations and shortages in men and equipment, there's just one proven method of increasing gallonages per man, per truck, per hour, per day on rural routes. That is by speeding up deliveries through the use of the Brodie Meter operating in combination with a pump. This not only speeds up delivery but provides a continuous record of the exact gallonage, eliminating errors, losses and waste. By permitting one truck and one operator to transfer five to ten times more gallonage in the same elapsed time required by cumbersome methods, Brodie Meters save manpower, manhours and eliminate manual effort.

BRODIE METERS

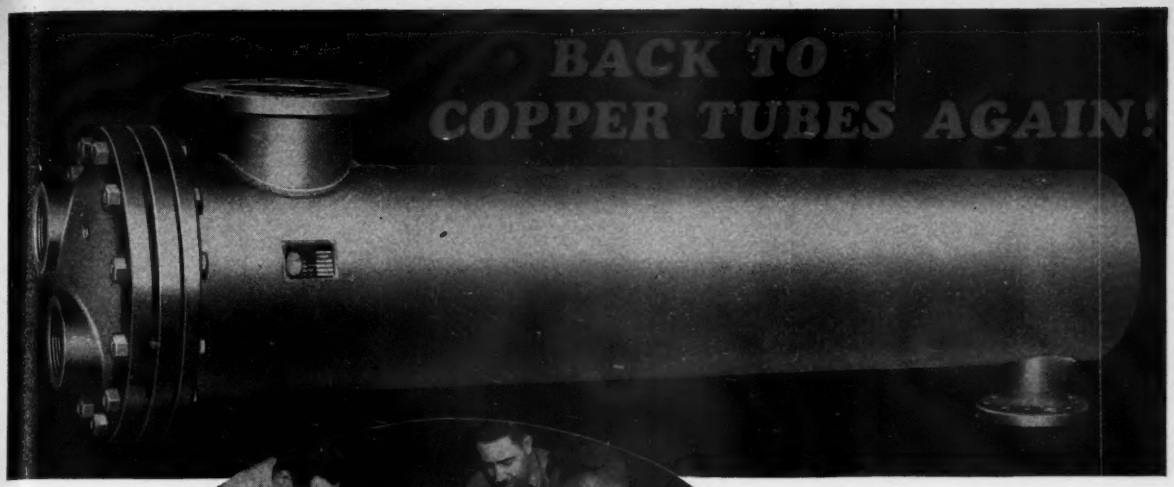
PETROLEUM METERING EXCLUSIVELY

SINCE 1927

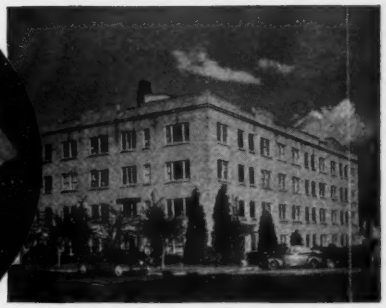
RALPH N. BRODIE CO., Inc.
959 61ST STREET, OAKLAND, CALIFORNIA, U.S.A.
CABLE ADDRESS: "BRODICO"

Division Offices: CHRYSLER BLDG., NEW YORK CITY
59 E. VAN BUREN, CHICAGO • 302 SOUTH PEARL STREET, DALLAS, TEXAS

REPRESENTATIVES AND STOCKS IN AIL PRINCIPAL CITIES



STEAM-TO-WATER INSTANTANEOUS HEATER



COMPLETE LINE OF WATER HEATERS NOW AVAILABLE FOR INDUSTRIAL PLANTS, INSTITUTIONS AND APARTMENT BUILDINGS

WATER-TO-WATER INDIRECT HEATER

This Heater can be used either on hot water boilers or installed below the water line on steam boilers. Requires a storage tank.

SEND FOR THIS CATALOG OF NEW B&G INSTANTANEOUS WATER HEATERS

Features easy sizing tables which enable you to select a heater quickly and accurately. Includes a few simple rules showing you how to avoid common errors when designing service water systems . . . and how to compensate for varying conditions of service. Capacities are listed for all usual inlet and outlet temperatures.

B & G Instantaneous Water Heaters are for *external* application to any size or make of steam boiler.

You've never been in a better position to make water heaters put plenty of figures on the profit side of the ledger! Several years of curtailed civilian purchasing have created a huge replacement market—increased building in the institutional and group housing field brings a choice opportunity for water heater sales.

B & G Water Heaters are now available with copper tubes, instead of the substitute material we've had to use because of war restrictions. The generous heating surface built into all B & G Heaters, plus sound construction, assures you of both satisfactory performance and long service life.

The Instantaneous Water Heater illustrated above is typical of B & G engineering. It's for heating water with steam and designed for installation where large volumes of hot water are continuously required. No storage tank needed.

B&G

BELL & GOSSETT CO. WATER HEATERS

MORTON GROVE, ILLINOIS

Canadian Licensee: S. A. Armstrong Ltd., 115 Dupont St., Toronto

fueloil & oil heat

Keep 'em Rolling

Part Two on the Know-How of Servicing Burner Motors

By
J. W. Schulz

The first part of this discussion of motors for automatic heating equipment, which began on page 24 of the December 1943 issue of FUELOIL & OIL HEAT, *listed the seven types of motors the expert serviceman can recognize. It gave details on the construction, load-handling ability, troubles, and repairs of the following motors which are most popular in domestic oil heating:*

1. *Split phase motors*
2. *Repulsion-induction motors*
3. *Capacitor - start induction - run motors*

Newcomers to oil burner service work who desire to gain a foundation of motor knowledge, and old timers who aim to keep well posted, should read the first article in this series before proceeding with Part Two which follows.

PRESSURE atomizing oilburners usually are powered by a motor that runs at 1750 rpm, approximate full load speed. That means a four pole, 60 cycle motor. Though this sacrifices accuracy for the sake of brevity, in ordinary conversation any four pole, 60 cycle motor may be termed a "1725", "1740", or "1750" motor. Or, in recognition of the speed of its magnetic field, it may be termed simply an "1800" rpm motor.

The four pole motor provides a shaft speed which is extremely popular; in the oilheating industry it is used for gun type burners, hot water circulators, blowers of warm air and air conditioning systems, light oil pumps using direct drive, and heavy oil pump sets in which the pump shafts are geared or belted to turn slower than the motor shafts. Incidentally, the same motor speed is practically standard for stokers, refrigerators, water pumps, sump pumps, and belt-drive attic fans and similar fans.

A few pressure burners use six pole motors, 1150 rpm approximate full load speed. A six pole motor may be used for any pressure burner if it gives satisfactory operation of the oil pump together with enough air from the blower for clean burning with the flame size needed. Slower speed gains special smoothness and quietness from pressure burners carrying light loads. For example, a burner rated to fire 6.0 gph, but fitted with a 3.0 gph or smaller nozzle, may be exceptionally quiet when powered by a six pole motor (1150 rpm) instead of by the four pole motor (1750 rpm) on which the gph rating is based. Some burner manufacturers offer two models identical except for motor speed, a four pole motor being used for the model of higher gph rating, a six pole motor for the other model.

When an "1150" motor in a pressure burner goes bad, you can get by temporarily on a four pole motor ("1750"). The burner will operate at 50% higher speed than it has been running. It can be expected to give a bit more noise, but practically there is no other drawback for temporary operation.

If you have only a six pole motor ("1150") on hand for a sick pressure burner that has been operating at about 1750 rpm, you will hope that at the slower speed the oil pump will maintain a steady atomizing pressure for the nozzle. Install a pressure gauge on the burner to check this. If the burner carries considerable load for its gph rating or if the oil pump has worn and has lost some of its spunk, there may be no oil from the nozzle when you adjust for very high atomizing pressure, say 150 lbs. Cutting down to 120 lbs. atomizing pressure may give a flame which changes size, almost going out at times because the automatic shut-off valve is wire-drawing instead of staying wide open. Use of 110 lbs. may give seemingly steady burning with flame size correct for the particular nozzle. The thing to do, then, would be to operate temporarily at a somewhat lower pressure, say 80 or 90 lbs., to play very safe against the flame going out with the burner in operation. Also you may have to use a nozzle of lower capacity than was used before.

Switching a pressure burner to the lower motor speed may provide insufficient blower air for the size flame usually used on the job, even though you open wide the air adjustment damper on the burner. Temporary use of a lower firing rate may be necessary.

Switching to a motor of different speed on any installation calls for a complete check-up on all the burner adjustments. If you are working on a burner fitted with a safety control that uses a heat element in series with the motor, check especially on the timing of the safety control.

For water circulators and air blower equipment, usually you can use a six pole motor (1150) to pinch hit for a defective four pole motor (1750). Invariably this gives at least temporary heat until the proper speed motor can be used again. Switching from a six pole to a four pole motor, i.e., using 50% higher motor speed, may or may not be feasible depending on the characteristics of the particular equipment. Should you try it, be on the lookout for excessive vibration, for abnormally high rate of water or air circulation (which you may be able to reduce by closing a valve or a damper partly), and for the possibility of the substitute motor burning out because it runs faster and carries a heavier load than the regular motor.

High Speed Motors

In the field of oilheating, the two pole, or "3450", "3500", or "3600" rpm motor, is standard for horizontal rotary cup burners which employ direct drive from the motor shafts to the fan wheels and atomizing cups. Don't try an "1150" or "1750" motor on a horizontal rotary cup burner, even if the burner model takes a standard base motor and permits making the experiment. And don't try a "3450" motor on a pressure burner (for one thing, the oil pump is not built for this speed). With such switching of motors, the chances of getting safe, dependable heat for a few hours are exceedingly slim even for the expert who has a complete understanding of the involved engineering problems and a pack of tricks.

A goodly amount of Know-How about motors must be exhibited in the basement when a serviceman wonders if a certain spare motor off the stock room shelf can be substituted until a sick motor has been overhauled. These factors must be weighed:

1. Can the spare motor be fitted to the equipment? The motor base or mounting and the shaft size must be checked.

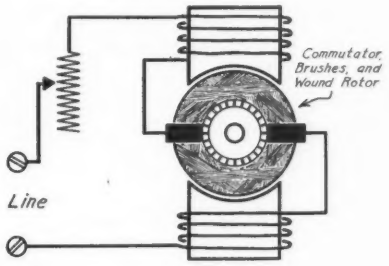
2. Has the motor the required horsepower? Of course, you can overpower the equipment temporarily, using a 1/4 hp. motor in place of a 1/6, for example. The real test of a mechanic comes when he must decide if a 1/6 hp. motor can service in place of a defective 1/4 or 1/3 hp. motor, and when he must lighten the motor load to permit providing temporary heat with an undersize motor.

3. Is the spare motor's speed satisfactory for the application? Generally four pole and six pole motors (1750 rpm and 1150 rpm) can be interchanged as has been described. If a two pole motor (3450 rpm) was used, in most cases a slower motor won't give even temporary heat. And if a lower speed motor was used in the past, don't try a two pole spare motor without realizing your experiment probably represents wasted time. A universal motor can not be used in place of a two pole, four pole, or six pole motor. You must use only the proper universal motor to pinch hit for a defective universal motor. In other words, there's no switching to another type motor where a universal motor is involved.

4. Must you alter the direction of rotation of the motor shaft? Don't fail to check on this by placing current on the spare motor and finding out which way it runs. If you know motors, in a few minutes you can alter the direction of a split phase or a capacitor-start induction-run motor by taking off the motor end bell, uncovering the splices of leads and motor windings, and switching the connections to *either* the starting winding or the running winding. Do not switch both sets of leads. The shaft rotation of an induction repulsion motor is altered easily by proper changing of the location of the brushes. Reversing a polyphase motor is easiest of all—simply swap the external wires to the motor in a way that will be described presently.

5. Has the spare motor sufficient starting torque to handle the load? A spare motor of starting ability equal to or exceeding that of the original motor is a safe bet. And frequently, in work on automatic heating plants, a motor of poorer starting ability will get by nicely. For example, a 1/6 hp. split phase motor may be used for a small pressure burner because the starting torque required is light. Yet a good many small pressure burners are fitted with 1/6 hp. capacitor-start motors, and a few with repulsion-induction motors. Knowing this, a serviceman will not hesitate to install a 1/6 hp. split phase motor in place of the same size capacitor-start or repulsion-induction motor. To play safe, he will make sure before he leaves the job that the replacement motor has no difficulty in starting. If there are any doubts in his mind about this when he uses the motor of poorer starting characteristics he will have the spare motor started only when someone is on hand to observe that it starts instantly. If it does not start the current must be turned off to kill chances of burning out the motor windings.

Universal Motors



Diag. 1

Need for higher motor shaft speeds than can be provided by the other types of motors is the big reason for the use of the universal motor in the oil heating industry. This type motor has been used in a midget model horizontal rotary cup burner, where in order to attain the needed edge speed from an atomizing cup little larger than a sewing thimble it was found desirable to have the direct-drive motor turn over considerably faster than the 3500 rpm of a two pole motor of the alternating current type. In another application well known to the burner industry, the atomizing cup of an atomizing vertical rotary burner is driven about 10,000 rpm by a universal motor. The characteristic speed of a universal motor has been described as "as high as the load permits." Speeds over 15,000 rpm are attainable from small motors that operate under loads only slightly heavier than are imposed by their own bearings and the drag of air on their armatures.

As Diag. 1 recalls to motor-minded service experts, the universal motor comes close to being a series-wound direct-current motor. Its name comes from the fact that it can be designed for operation on alternating current or direct current.

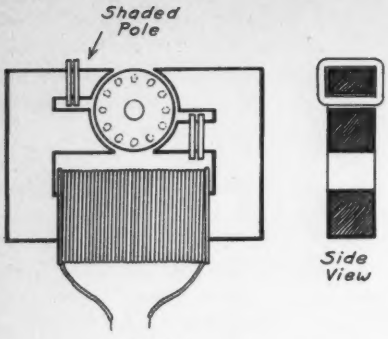
Service attention is needed for the bearings and the commutator and brushes. To insure long life at the high shaft speed, and to minimize bearing friction and lubricant drag so that the motor speed is not decreased, care should be exerted to lubricate the bearings exactly as the manufacturer recommends. The word of caution about not applying sandpaper vigorously to every commutator in need of attention, goes double for universal motors. In use every moment the motor is operating (unlike the commutator of the repulsion-induction motor which is in use only while the motor is starting), the commutator must be maintained in good condition or the speed will be unsatisfactorily low. A wise serviceman either becomes 100% expert at servicing universal motors, and learns from the manufacturer the highly specialized care that should be given them, or he refrains entirely from attempting to service this type.

The diagram indicates a resistance in series with the universal motor. This is the one type of motor whose speed can be reduced by the use of such a resistance.

While they are relatively little known in the oilheating industry, universal motors are not as rare as some burnerwise men seem to believe. They are widely used in vacuum cleaners, drink mixers, domestic sewing machines, electric drills, and various types of office machines.

Shaded Pole or Shading Coil Motors

Diag. 2 shows the elements of a shaded pole motor which has two poles and one winding. The shaded pole is obtained by encircling part of a pole with a band of copper. Diag. 3 shows a reversible motor of the shading coil type. Connecting together permanently the two leads of shading coil "A" causes the motor to run in one direction when current is applied to the field coil terminals; connecting to-



Diag. 2

gether the leads of coil "B" causes the motor to run in the opposite direction when the main coil receives current.

Both these motors (in Diags. 2 and 3) have squirrel cage type rotors. This, plus the lack of any type of starting device with moving parts, makes for extreme ruggedness. Efficiency is sacrified, however, to gain this ruggedness, therefore the application of these motors is limited to extremely light loads such as those given by electrically operated valves and dampers, small fans of oilburners of low capacity, and control devices and timing instruments. It is unusual to encounter a shaded pole or shading coil motor much larger than 1/40 hp., or of current rating more than 60 watts. Typical motors of this type draw 5 to 40 watts.

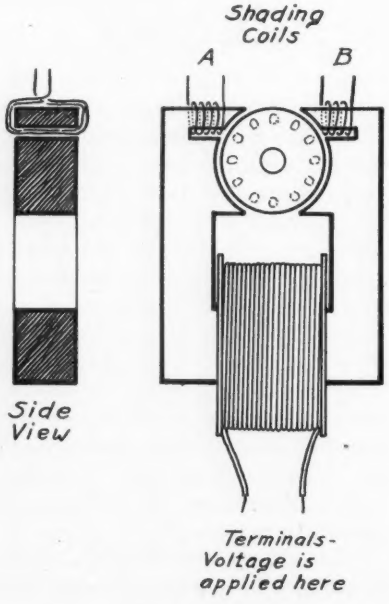
Special Capacitor Motors

Encountering a special capacitor motor, the best thing a serviceman can do is obtain complete data on it from its manufacturer. The problems of this type can not be summarized as for the other, older types of motors, for each manufacturer attains his objectives by the methods he finds most suitable for the particular bent he favors. Special capacitor motors may have two or more capacitors, several windings, and an adjustable auto-transformer to top it off. You must obtain wiring diagrams from the manufacturer when you face the problem of connecting properly a special capacitor motor that can run in either direction, on either low speed or high speed, on either 110 volts or 220 volts. There are no thumb rules to apply to this problem; though understanding the principles of the motor will lead you to the proper wiring with other types of motors, it will not help in this case.

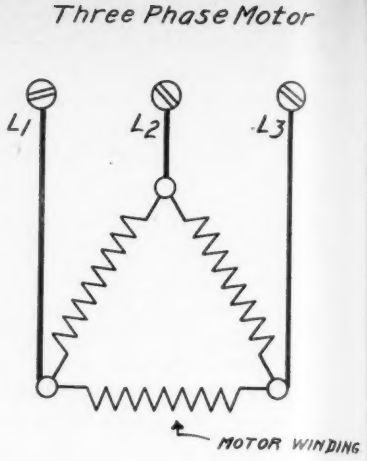
As relatively few special capacitor motors are in use today in the oil heating field, the serviceman may be little interested in them. But this type of motor is of tremendous interest to those in the oil-heating and air conditioning industries who are thinking ahead to the Post-War era. This is the motor for carrying sizable loads at adjustable speeds. Automatic control or manual adjustment can be used to regulate the motor speed. Thus the development of special models of capacitor motors is broadening immeasurably the possibilities that lie ahead. The designer of Post-War equipment will not be forced to select an alternating-current motor for 850, 1150, 1750, or 3450 rpm, and have his equipment stick to that motor speed for life. His equipment will be able, if he desires, to operate at in-between speeds that he selects or that are selected on the job; in addition, it will be able to alter its speed automatically to meet different conditions of load and of control. This will apply for motors to carry loads from 1/20 hp. to 3 hp. in the domestic and small commercial field.

Polyphase Motors

"The only fault in the polyphase motor," declares a serviceman, "is that it can't be used for every oil burner because the special three or four wire current it needs is not found in homes and small commercial buildings."



Diag. 3

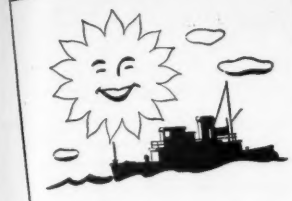


Diag. 4

There is no argument about the polyphase motor being the most dependable, troublefree, and foolproof of all types. It has no starting device of any kind; its principles make unnecessary the commutator and brushes used to start the repulsion-induction motor, the centrifugal switch and starting winding of the split phase motor, and the centrifugal switch, starting winding and capacitor of the capacitor-start induction-run motor. The polyphase motor has only the very rugged squirrel cage rotor (no armature windings), and a set of almost equally rugged field windings—easy and inexpensive to replace. But it needs special current, three-wire or four-wire, that is not always obtainable. This current is found in larger factories, hospitals, institutions, public buildings, etc. Occasionally polyphase motors as small as 1/4 hp. are used, though 1/2 hp. is the smallest size commonly used in some cities. Starting torque and starting current characteristics of the motor are excellent; motors up to 15 hp. are started automatically simply by connecting them "across the line," that is connecting the current right to them without first throwing auxiliary starting devices that lighten the current draw. The virtues of this type motor include admirably high efficiency for starting and running, and usually from about 35% to 110% or 125% of its rated capacity.

Diag. 4 shows how the three motor windings of a three phase motor are connected to each other and to the three feed wires L1, L2, and L3. The method of using three wires and three phases for

TAKING YOUR CUSTOMERS IN TOW



COMFORTABLE LIVING ASSURED

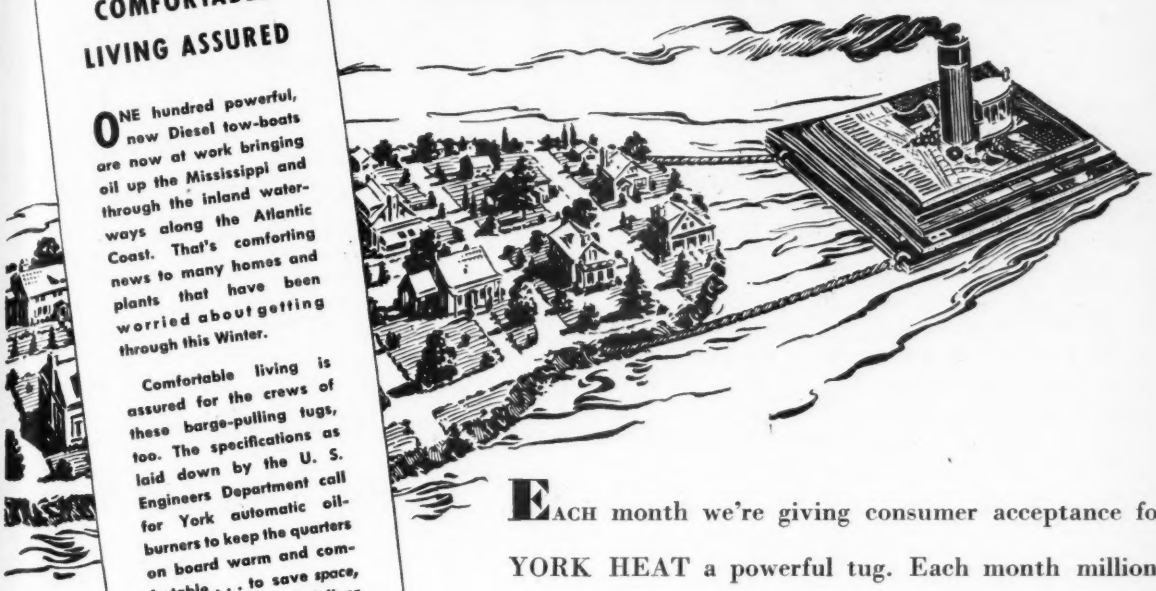
ONE hundred powerful, new Diesel tow-boats are now at work bringing oil up the Mississippi and through the inland waterways along the Atlantic Coast. That's comforting news to many homes and plants that have been worried about getting through this Winter.

Comfortable living is assured for the crews of these barge-pulling tugs, too. The specifications as laid down by the U. S. Engineers Department call for York automatic oil-burners to keep the quarters on board warm and comfortable . . . to save space, reduce weight, and deliver more heat.

Years of experience in designing and installing oil-heating equipment are behind York Heat. To this back-log has been added the further experience of applying York Heat to all kinds of war-time uses. You can be sure that when York Heat is again available for the homes of tomorrow, it will offer new economies, new conveniences, and new living comfort.

YORK HEAT

Division of
YORK-SHIPLEY, INC.
York, Pa.



EACH month we're giving consumer acceptance for YORK HEAT a powerful tug. Each month millions of people are reading about YORK HEAT in the leading magazines. This means hundreds of prospects are being developed right in your own home territory. It means that York dealers won't have to waste any time cashing in on YORK HEAT when the war ends.

This is another of the YORK HEAT advertisements appearing regularly in: AMERICAN HOME • HOUSE *and* GARDEN • HOUSE BEAUTIFUL • BETTER HOMES *and* GARDENS • TIME (*Canadian Edition*) • BUSINESS WEEK.

YORK HEAT

Division of YORK-SHIPLEY, INC., YORK, PA.

fuelfoil & oil heat

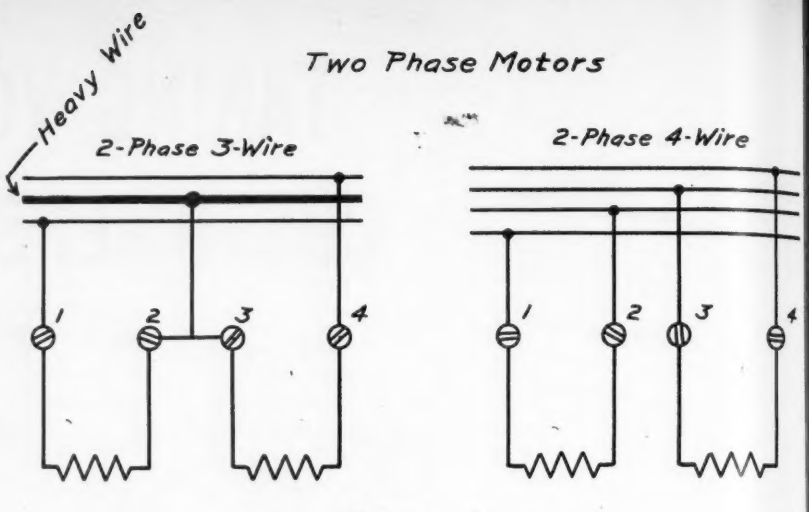
the current is very popular today, a simple way to regard this is "each of the three line wires carries one phase." To reverse the motor whose wiring is shown in Diag. 4, simply disconnect any two wires going to the motor (from L1 and L2, for example), then place them back in the opposite positions.

The two phase motor connections shown in Diag. 5 permit reversing the motor as easily. Simply disconnect two wires running to any winding (disconnect wires 1 and 2, for example) and put them back in the opposite positions.

Special relays are used with automatic oil burner polyphase motors to disconnect every wire from the motor when the motor is idle (one set of contacts for each line to the motor) and to protect every winding against excessive draw of current that would burn out the winding. If any winding draws excessive current for a certain number of seconds, a heater element in the special relay becomes warm and trips a trigger which opens a small switch wired in series with the solenoid coil that holds in all the contacts of the relay when the motor is running normally. A "Reset" button on the cover of the special relay must be pressed to start the motor after it has been stopped by its overload protection devices. With proper overload protection devices serving polyphase motors and kept in good working order, the motor windings simply can not be burned out.

Protect Motors

The matter of proper overload protection is well considered in connection with every motor 1/20 hp. and larger. It is easy and simple to provide motor protection that absolutely prevents burning out of motor windings; the motor which is stuck or overloaded simply is snapped out of service by an automatic device that acts before the motor winding can be damaged. Of course, there are the good and the bad among overload protectors. It pays to become familiar with more than one such device before declaring you are all-out for a particular make or type. Find the right one, however, and apply it to every motor in your customers' homes, then take proper care of the motors and the overload protectors, and you will find you are among the equipment dealers who can truthfully boast that they "never have a motor burn out."



Diag. 5

Repair Materials Eased; Revised Orders Up-Rate Parts

REPAIR parts sufficient to keep every oilfired heating plant in first-class operating condition is the aim of a more vigorous policy by Government agencies recently revealed and made tangible by revisions of limitation orders affecting the industry. Materials that formerly have been in extremely tight supply now are being released to the heating industry, and though manpower both for manufacturing and field work is now a problem, it is expected that this situation may also be eased before long.

Field reports collected in December revealed the urgency of material shortages in the oilheating industry. Shortages of the various materials and repair parts varied in their intensity depending on supplies in different areas, but generally it was the copper and copper-bearing items that have been most difficult to get. Dealers reported the order in which they had difficulty in getting parts and materials for oilburner repairs last year. Products ranged from motors and pumps to flashlight batteries and hand tools. Listed and indexed according to the urgency of shortage last year, the more important items were:

Motors	30.2	Tubing	6.3
Pump units	17.1	Tanks	4.8
Controls	12.5	Refractories	4.3
Wire	9.1	Bellows	3.5
Transformers	7.8	Nozzles	3.3

Much of the demand for wire was for motor repairs, so if a part of this were included with the motor index, it would indicate about twice the urgency for motors and motor repair materials as for fuel units in second place. Bellows, with an index of 3.5, should be included with the fuel unit demand, but was listed separately as shown on the reports.

Steps have been taken to ease these shortages since the information has been collected. CMP Regulation 9A makes available for a repairman's own use (as contrasted with manufacturing for sale to other dealers) copper wire and tubing, steel pipe and sheets, and aluminum wire and rods, and assigns a AA-3 rating to such orders for repair materials. In each calendar quarter a dealer may buy up to 20 tons of carbon and alloy steel, 500 pounds of copper and allow, and 200 pounds of aluminum under this order. In addition he may buy $150 worth of copper wire, or one-eighth of what he used for making repairs in 1941, whichever is greater. Distributors are permitted to buy

What about TOMORROW?

Almost every manufacturer is trying to give 100% attention to immediate war production, while also endeavoring, by some mysterious alchemy to transmute plans and programs into products for postwar.

And the sanely impossible is being done! American genius is versatile.

Tomorrow may be near or far—but when it comes you may count upon Toridheet for three basic advantages. They will be—

1. ***Continued high respect*** for the engineered quality and practical service record of all Toridheet products by servicemen, dealers and distributors.

2. ***Definitely outstanding*** leadership in beauty of design, efficiency and value. Continuing research will be reflected in all Toridheet products.

3. ***Completeness*** of Toridheet lines will provide Toridheet distributors and dealers with unusual sales opportunities. All studies and surveys of postwar building projects and postwar needs prove it. Where will you sit in the picture? Might pay to investigate. Write—

MEMBER OBI OIL BURNER INSTITUTE

CLEVELAND STEEL PRODUCTS CORP.

TORIDHEET DIVISION • CLEVELAND 2, OHIO

Oil Burners • Air Conditioning Units • Oil-Burner Boilers
Coal and Gas Furnaces • Water Heaters

fueloil & oil heat

up to 6000 pounds of copper tubing in any calendar quarter, and may sell to service organizations only for the repair of functional parts of the burner, and not the piping system.

Dealers needing copper wire or tubing may assign a AA-3 preference rating to their orders simply by including a statement swearing that they are entitled to receive these materials for making necessary repairs. Copies of CMP Regulation 9A are available at local field offices of WPB.

Oilburner service organizations also have been provided with a AA-3 rating to get burner parts for necessary replacement under a revision of L-79 which became effective January 15. This new order replaces the former L-79 and its various interpretations, as well as P-84, and provides a AA-3 rating for the replacement of "List A" as follows:

1. Furnaces, heating (as defined in Order L-22), and cast iron boilers, heating (as defined in Order L-187), but excluding furnace-burner and boiler-burner units in which the boiler or furnace is designed for use of oil or gas only as a fuel.

2. Water heaters, not electric or industrial (direct-fired and indirect, as defined in Limitation Order L-185).

3. Tanks, including range boiler and expansion tanks (as defined in Order L-199).

4. Cast iron tubular radiators.

Not only may these units be assigned a AA-3 rating when the dealer buys them for replacement, but all repair parts for "List A" and "List B" also may be assigned AA-3 ratings. List B of items controlled under other orders (but whose repair parts are obtainable under L-79) includes commercial cooking units, commercial dishwashers, Class A stokers, Class B oilburners, extended surface heating equipment, steam and hot water unit heaters, unit ventilators, convectors, blast heating coils, special heating coils and steel boilers listed in Order M-293, Table 14.

Class B (domestic) oil burners are replaceable only under the terms of L-74, though all necessary repair parts carry a AA-3 rating for the dealer under L-79.

Consumers are not assigned preference ratings under this order, but they do not need ratings unless they want to buy products on List A for purposes other than replacement in which case the consumer applies on form WPB 1319, the same as when replacing an oilburner less than 10 years old that still is capable of operating.

Dealers assigning AA-3 ratings to replace products on List A must get a statement from the customer that he is buying the equipment to replace worn out, damaged or destroyed equipment, and the substitution will not provide more extensive facilities. No statement is required from the customer for repair parts. Inventories of repair parts on dealers' shelves must not exceed 60 days supply when obtained under this order.

Electric motors for replacement now can be ordered by dealers with a AA-3 under L-79, or wire can be ordered for motor repairs under CMP 9A with a AA-3 rating. As in the past, when repair materials are not obtainable on the available rating, it is always possible to apply to local WPB field offices for higher ratings necessary to get the materials. Most dealers have had very satisfactory cooperation from the WPB field offices in obtaining ratings sufficiently high to get badly needed parts and materials. It is understood that recommendations already have been made to authorities in Wash-

SPEEDI-DRI is a white, granular, oil- and grease-absorbent that should be standard equipment wherever fuel oil flows or grease is used. Spread on floors, pavements, or driveways, it quickly soaks up oil and grease like a blotter. End those customer-complaints. Retard fire. Save yourself back-breaking, time-consuming cleaning-labor. Easy to use. Safe, clean, economical, unrationed. Use it around high-boys and fill-pipes. Write for complete details and FREE SAMPLE.

SUPPLIERS: East—Refiners Lubricating Co., New York 1, New York.
Midwest & South—Waverly Petroleum Products Co., Philadelphia 6, Pa.
West—Waverly Petroleum Products Co., Russ Bldg., San Francisco 4, Calif.

SPEEDI·DRI
OIL AND GREASE ABSORBENT

U. S. BULLETIN ★ FEBRUARY

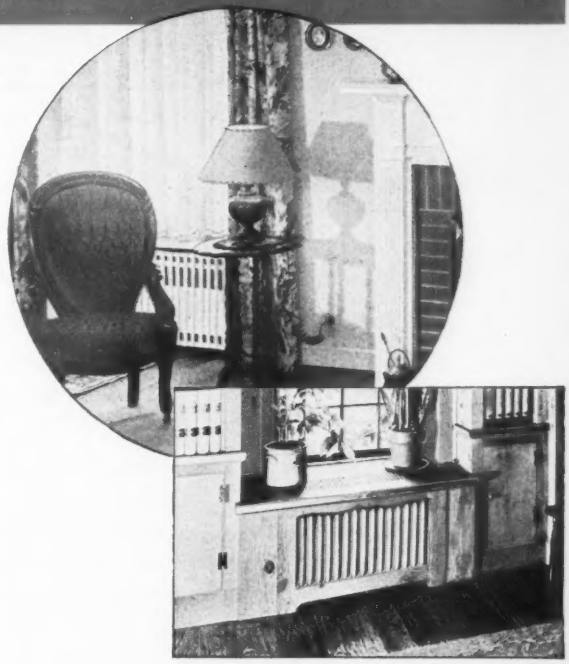
HEATING EQUIPMENT IS ALWAYS ESSENTIAL

During Peace and War U. S. Radiator continues to serve the needs of the nation

Production of heating equipment is actual war production. Heating equipment for military installations, hospitals and ships is just as essential as guns and ammunition in the carrying on of war. U. S. Radiator facilities have contributed to such essential requirements.

Heating equipment is essential, too, for civilian requirements in war as well as peace. Without a minimum of adequate heating, health would be endangered and the war effort slowed down.

Thus, the facilities of U. S. Radiator and Pacific Steel Boiler Division continue to serve the needs of the nation by supplying heating equipment to the best of their ability. In addition to carrying out this primary function, we are also engaged in the production of other vital war materials.



U. S. Radiant Warmth from Sunray and ThinTube Radiators, recessed or enclosed, harmonize with charming period or modern interiors.

US RADIANT WARMTH

UNITED STATES RADIATOR CORPORATION

AND

PACIFIC STEEL BOILER DIVISION

Detroit, Michigan · Branches and Sales Offices in Principal Cities

Manufacturing Plants At:

Bristol, Pa. · Detroit, Mich. · Dunkirk, N. Y. · Edwardsville, Ill. · Geneva, N. Y. · Waukegan, Ill. · W. Newton, Pa.

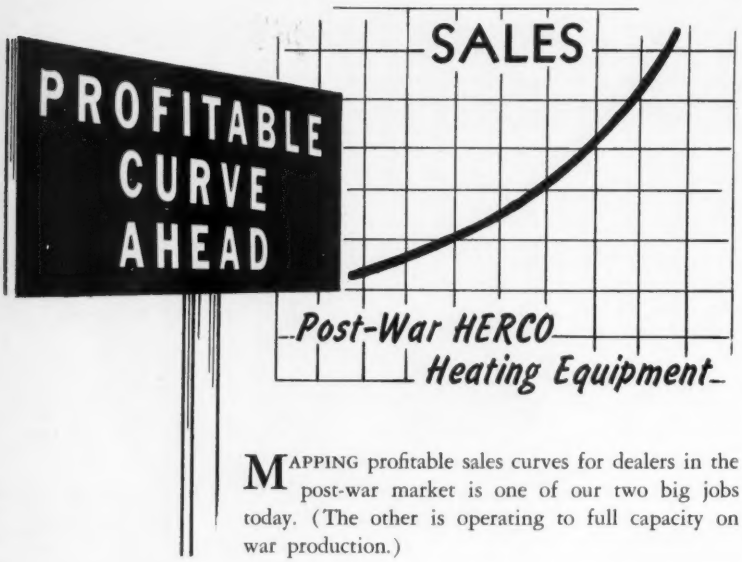
Member The Institute of Boiler and Radiator Manufacturers • Member of Steel Heating Boiler Institute

fuelfoil & oil heat

ington that 180,000 fractional horsepower motors be made available for oilburner and stoker work this year. Final action has not been taken on the request.

In view of the fact that the present inventory of completed oilburners probably will be exhausted before the start of next heating season, officials feel that there will have to be provision made for the manufacture of additional burners. It is not contemplated that restrictions on the general manufacture of burners will be removed in the near future, but only that some fabrication of parts and burners will have to be permitted to make necessary replacements available. No provision has yet been made to allocate materials for oilburners in the second quarter, so the production of burners will not start before July.

Some experts are predicting an easing of the manpower shortage by early summer, due to cut-backs and contract cancellations in the war program. Some have predicted actual unemployment in the country by next fall. Any relaxation of the present tight manpower situation would make possible more materials and labor for the manufacture of essential replacement parts. The present easing of materials for the production of parts for maintenance and repair is being interpreted in some quarters as the start of an era of increasing production of civilian goods.



MAPPING profitable sales curves for dealers in the post-war market is one of our two big jobs today. (The other is operating to full capacity on war production.)

STEP NO. 1—to design new Herco heating equipment to meet post-war requirements. This Herco equipment will incorporate new and improved features with the fine engineering which has earned Herco's reputation for oil economy and dependability.

STEP NO. 2—to plan dealer protection for post-war profits. We are now offering a dealer franchise that will assure you profitable Herco business in the post-war market.

Write for information today.

HERCO OIL BURNER CORP.
LANCASTER, PENNA.

— Service in Wartime Sales in Peacetime —

HERCO
The Oil-Thrifty
OIL BURNER

Industry Finds New England Local Boards Most Competent

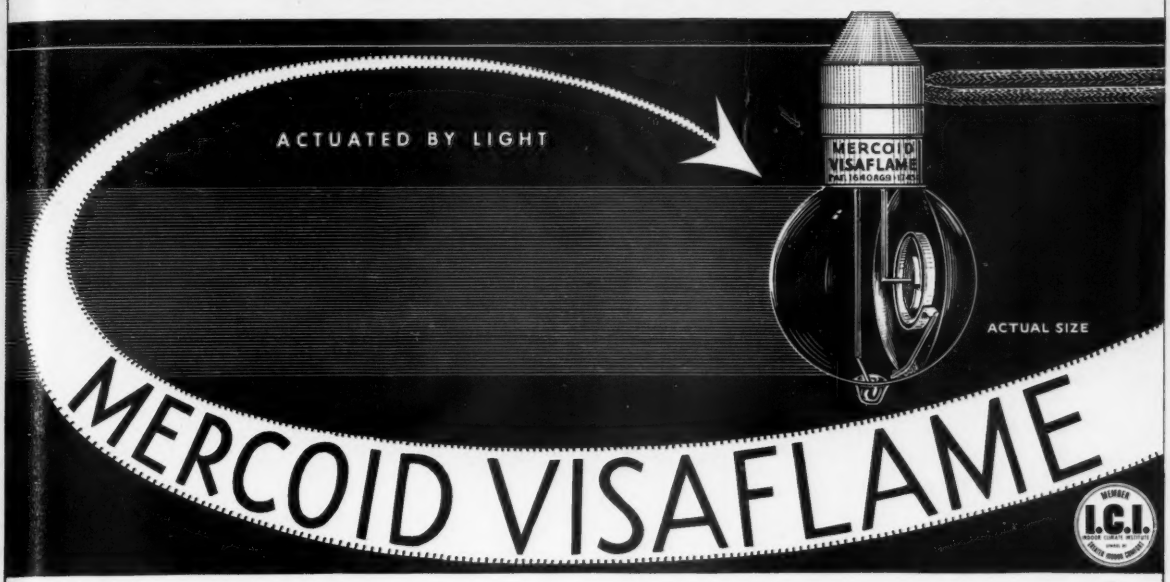
FUELOIL DISTRIBUTORS throughout the principal rationed areas were asked last month for an impression of the general competence and cooperative spirit of their local rationing boards in handling the fueloil rationing program. New England boards have made the best impression on the industry, with Pacific Northwest boards second and Middle West third. Asked to rate board capability as good, fair or poor, several hundred fueloil men voted as follows:

	Good	*Fair*	*Poor*
New England	59%	41%	0%
Pacific Northwest	56	44	0
Middle West	50	46	4
Middle Atlantic	48	42	10

That such a large percentage voted "good" in each of the four areas is surprising, since there are so many things that every board must do that cannot fail to get in the distributors hair. Because he is a merchandiser with customer satisfaction uppermost in his thinking, the fueloil man is always distressed when a home must be chilly because of too little fuel, but if boards gave everyone who was chilly more coupons there would be no point in rationing at all. So the conscientious distributor suffers vicariously with each customer's discomfort. Moreover, rationing cut his business volume sharply, increased his work load on both trucks and manpower.

New England customers suffered relatively more last winter than those in any other section of the country; the actual fueloil they got was least in relation to weather severity. The fact that oil men in those states have the highest opinion of board capability can only mean that the boards up there are actually doing the best job. Some of the laurels should go to Graham Bates, OPA's New England regional fueloil rationing executive and some to Eldon Shoup, regional chief of all rationing programs in that area.

THE MECHANICAL EYE



USED ON WAR OIL BURNER INSTALLATIONS
RECOMMENDED FOR YOUR POSTWAR PLANS

Long before Pearl Harbor, the Mercoid Visaflame has been the guardian of thousands of oil fired heating plants, performing without care or service. These installations are truly appreciated today by the owners who, through manpower shortage, are dependent upon the proper functioning of the automatic control equipment.

The Mercoid Visaflame is an advanced step, yet a tried and proven safety control system.

Since Pearl Harbor some strides have been made in electronics, but the filament tubes and milliampere relays involved, are costly, and still require delicate and skillful handling.

The Visaflame has demonstrated its practicability in oil burner fields to the extent that leading engineers and manufacturers are including the Visaflame Control System in their postwar plans.

A 100% mercury switch control equipment – the best in every test.

Samples are available for examination and trial.

Our engineers will gladly assist in their proper application.

THE MERCOID CORPORATION, 4213 BELMONT AVE., CHICAGO 41, ILLINOIS

Engineered Firebox Cuts Demand

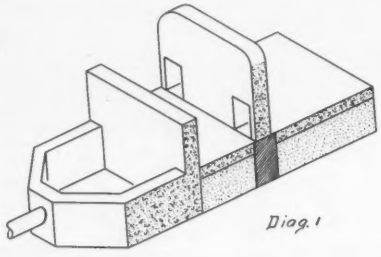
THIS BURNER always had a record of dependable operation, yet it seemed that the dealer who installed it originally did not take much pride in it. The owner switched to his oil supplier for burner service about four years ago. Combustion tests showed ordinary performance. With 6.8% CO_2 the chimney smoked slightly and the heating surfaces wore a perennial thick coat of soot. The boiler's grate level dimensions were 27" x 48", the load was 2322 sq. ft. of standing hot water radiation, and 4.5 gph was fired in a combustion chamber 18" wide and 37" long. Poor combustion seemed due to the oversize firebox and to a very cool flame. More soot could be expected in this gravity circulation hot water boiler, which showed a maximum temperature of 150°F. in zero weather, than would be found in a steam boiler which would have higher fireside temperatures for its direct and indirect heating surfaces. By the same token the oil flame would be cooler in this hot water boiler.

The oil company pointed out to the burner owner four years ago that steps could be taken to improve the burner efficiency and reduce the oil consumption, but he was not interested. Only 5,800 gallons of oil were being used a year, he said, and at only slightly higher fuel cost there was much better heat than from coal.

Rationed down to 4,200 gallons of oil last heating season, the owner took a different attitude. He wanted as much heat as he could get from each gallon of oil.

In haste to stretch the ration, the oil company first cut the firing rate from 4.5 to 3.0 gph. A check-up on combustion, made a month after the firing rate had been reduced, showed combustion quality even poorer than before. Now, with the 3.0 gph flame in the firebox which was oversize for 4.5 gph, the flues wore a still thicker coat of fluffy soot, and the CO_2 with a trace of smoke was down to 6.2%. The stack temperature was 695°. For a ten day studied period, during which the degree-days totalled 310, 220 gallons of oil were used with the thermostat set at 65° days, 55° nights. One gallon of oil was used for 1.41 degree-days (K factor 1.41 for the oil company's automatic delivery system).

Convinced by the oil company that the proper improvements would fetch at least 20% more heat to the radiators for each gallon of oil burned, the owner gave the Go-Ahead order. After careful consideration of the problem, the oil company's experts decided to install a firebox of the proper size and materials, fitted with a refractory downdraft wall of the type shown in the accompanying drawings.

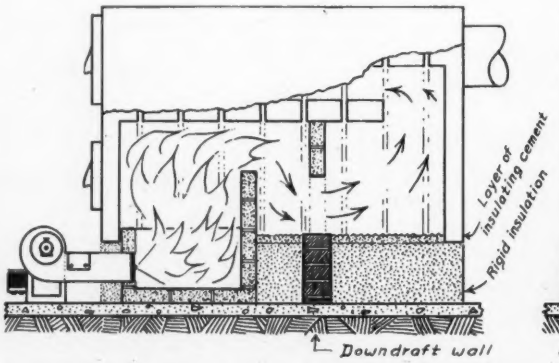


Diags. 1, 2, and 3 show the principles of building this type wall, which has been developed especially for lightly-fired rectangular boilers, and which should be of considerable interest to burner experts who have found that oversize boilers tend to be "soot collectors" when fitted with combustion chambers of ordinary design.

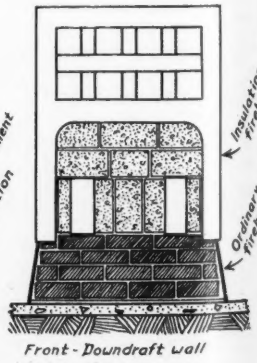
To design this type firebox, first figure carefully the firing rate needed for the boiler. Next, plan for a firebox having about 120 sq. in. of floor for each gallon-per-hour (gph) to be fired, and plan to build this of modern light-weight firebrick or of the popular material of the precast combustion chamber type. Have the side walls high, perhaps 2" to 4" higher than double the nozzle height, as the drawings indicate. The back wall is unusually high, about 9" above the side walls (see Diags. 1 and 2). The objective is to produce a firebox that will come to red-heat as quickly as feasible when the burner starts after a long lay-off. Built on a foundation of old-style heavy firebrick, the downdraft wall is made of insulating firebrick (good for 2000°F. service). The two openings in it provide a total of 40 sq. in. for each gph to be fired. Should this prove to give troublesome plus draft gauge readings on any installation, the chimney draft should be investigated first. Then if necessary, the size of the openings in the downdraft wall can be increased as this type of firebrick can be cut easily with a hacksaw blade. Rigid insulating material suitable for this application (such as expanded mica pellets used in a mixture of four parts of asbestos cement to one part of building cement) is used between the firebox back wall and the downdraft wall, and in back of the downdraft wall. It is topped off with a layer of insulating cement of the refractory type, suitable for 2000°F.

Diags. 4 and 5 show the firebox this oil company installed compared to the one that was replaced. The downdraft openings in the new firebox are each 6" wide, 10" high.

Cleaned of soot and fired at 3.0 gph with the new firebox and downdraft wall, the boiler showed 11.8% CO_2 without a trace of chimney smoke, and 440° stack temperature (with the original firebox and 3.0 gph, the CO_2 was 6.2%, the stack temperature was 695°). Whereas with the old firebox the direct heating surfaces stayed so cool as to collect soot, with the new arrangement they are swept by flame gases. When, experimentally, special steps are taken to coat these surfaces with soot (burning oil-soaked rags in the firebox),



Diag. 2



Diag. 3

TACO HEATERS

for today's special needs

Tankless Taco, opened up, shows large area of heating surfaces

Tankless Taco Heaters are particularly adapted to present conditions when tanks are difficult to get. In addition, these heaters save space, reduce radiation losses and eliminate the maintenance expense of hot water tanks.

They do away with the nuisance of rusty hot water. There is no place where sediment may collect and periodically be stirred up. Water is heated in non-corroding copper coils, submerged in hot water direct from the heating system boiler, circulating through an enduring cast iron body.

Tankless Tacos are made in a complete range of sizes and thousands are in successful service today.

Government restrictions on the manufacture of copper-tubed heaters for essential civilian use have been liberalized. Taco Tankless Heaters are now available to holders of necessary priorities. Ask your jobber, or us, for procedures complying with latest WPB rulings.

TACO TEMPERING VALVES

Automatically regulate and limit the temperature of hot water delivered to fixtures. Prevent excessive hot water after no-draw periods. A valuable adjunct in tankless installations. Two types—adjustable and non-adjustable. Described in Taco Catalog D-99.

NEW TACO CATALOG FREE

Shows all types of Taco Tankless Heaters, with a new Quick Selection Table that facilitates correct choice for any given requirements. Write today for Taco Catalog D-99.

PEACETIME HERITAGE

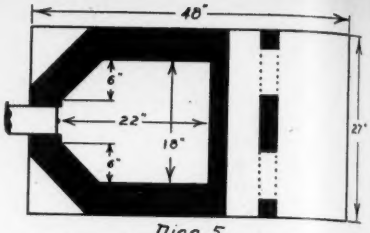
Taco's contribution to Victory is Naval-aircraft machine-gun mounts. As a result, we now have more precision equipment and more skilled workers—available for post-war production of Taco products, made to their former standards of excellence.

TACO HEATERS, INC., 342 MADISON AVE., NEW YORK 17, N. Y.
TACO HEATERS of CANADA, LTD., 24 ADELAIDE ST. W, TORONTO

fuel oil & oil heat

a ten minute operating period removes every trace of the soot. All direct heating surfaces that can be seen through the firing door, back to the downdraft wall, are swept by extremely hot gases which fill this part of the boiler completely. Studies reveal that the two openings of the downdraft walls are in normal operation filled completely with out-pouring red-hot gases. In consequence, surprisingly high CO_2 readings are obtained with no trace of chimney smoke, the boilers do not need flue cleanings for two to three years in some instances, and a drop in fuel consumption results not only from a decrease in the flue gas losses, but also from a pronounced increase in transmission of heat through the direct heating surfaces and from more speedy heating of the radiators, particularly of steam plants.

Diag. 4
Old Firebox

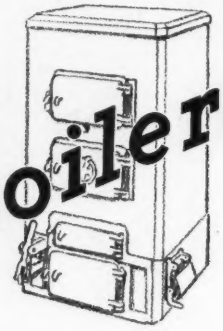


Diag. 5
New Firebox - with downdraft wall

The oil company made a check-up on the fuel consumption of its installation after the changes had been made. During a nine day period of 314 degree-days, 163 gallons of oil were used (compared with 220 used previously for 310 degree-days). The new K factor with the house heated to the same temperatures as during the earlier test was 1.93 dd per gallon. Carrying through the computations reveals that the new firing methods provide just 37% more heat from each gallon of oil used.

V

Bread AND Boilers



IF Mr. or Mrs. Homeowner does not like "Tastebest" Bread, it's simple enough to change to one of a dozen other brands. But pity the Homeowner who buys a new Boiler and finds it unsatisfactory and undependable. In this case it's not so easy to make a change.

So, be sure that the Boiler you specify or recommend, is the right size and type, and further, that it's a **Burnham.** Burnham Boilers have been *"Stinging Fuel Bills"* since 1873. Their dependability over this long time has been proven by the fact that more Burnhams heat those "hard to heat" Greenhouses than all others combined.

Send for Catalog.

BURNHAM BOILER CORPORATION

Irvington, N. Y. Dept. O

Zanesville, Ohio Dept. O

Export Department, 50 Church Street, New York 7, N. Y.

Burnham Boilers

No Ratings Needed to Replace Water Heaters

BOTH NEW AND USED direct and indirect fired water heaters may now be sold to consumers for replacement and maintenance purposes without ratings, the War Production Board has announced. A purchaser need only certify to his dealer that such equipment is needed to replace equipment worn out, damaged beyond repair, or destroyed, and that it will not be used to replace usable equipment or to make a substitution that would provide more extensive facilities.

Provisions of Order L-185, Water Heaters, which limited sale of such equipment to orders rated A-10 or better, were revoked to bring that order into conformity with the provisions of order L-79, which was recently amended to simplify the sale and to eliminate unnecessary paperwork in connection with the sale of plumbing, heating, and cooking equipment.

Order L-185 was primarily concerned with production of water heaters. Order L-79 now controls the sale of all plumbing, heating and cooking equipment.

Order P-84, which assigned a rating of AA-5 to purchase of water heaters by consumers for replacement and maintenance purposes, was revoked January 15, 1944, when L-79 was made the control-

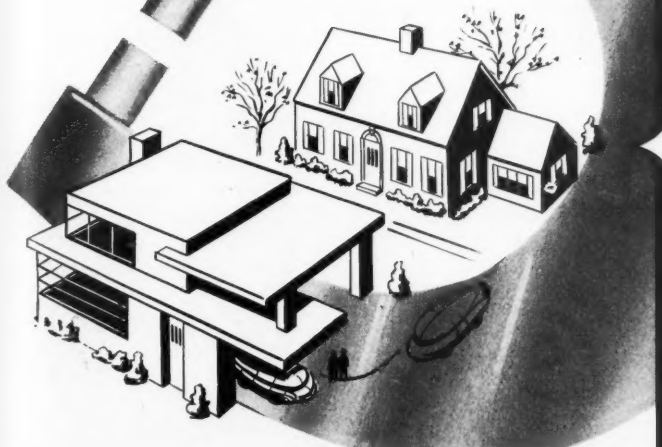
THE GAUGE OF

Better Living

WITH

OIL-O-MATIC

for both



TOMORROW'S Oil-O-Matic products will be the finest in an unbroken tradition of *precision-production* craftsmanship. Even finer than those prewar Oil-O-Matic products whose design and performance won *global acceptance* long before thought of *global war*. Because, to take up where we left off will not be enough—not nearly enough—to carry out Oil-O-Matic plans for tomorrow's better living . . . and *better business*.

There will be Williams-designed, *precision-built* Oil-O-Matic products for America's post-Victory homes—whether those homes are inspired by the architecture of today or the architecture of tomorrow. Oil-O-Matic will make those homes infinitely more livable, automatically—with vigilant concern for the healthful comfort of the occupants. And do so with superlative cleanliness, dependability, and long-life economy.

BUY WAR SAVINGS STAMPS & BONDS

THE BONDS YOU BUY TODAY ARE YOUR GUARANTEE OF A Better Tomorrow!

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WILLIAMS OIL-O-MATIC HEATING

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BLOOMINGTON, ILLINOIS

fuel oil & oil heat

ing order over sale and transfer of plumbing, heating and cooking equipment.

Sale of these heaters for other than replacement or maintenance purposes is still subject to WPB approval. Homeowners should apply for preference ratings on WPB Form 2631, while industrial and commercial users should apply on WPB Form 541.

Purchase of water heaters by sellers is now controlled by Order L-79, which assigns a rating of AA-3 to enable them to purchase and maintain an inventory of such equipment for new installations as well as for replacement purposes.

◈

THE FUELOIL DISTRIBUTORS PANEL of OPA's Rationing Division met with Division officials in Washington January 19th. The principal topics studied were overconsumption, dealer stocks, hardship relief, coupon validity dates, minimum drop sizes and industry cooperation with the Division. Attending for the panel were Frank Spencer, Lionel Jacobs, W. F. Schierholz, Lester Scott and N. R. Skaggs.

OHI Directors Get Report On Postwar Oil and Markets

DIRECTORS of Oil-Heat Institute met at New York, January 18, for their regular quarterly meeting, and received reassurance from the Post War Planning and Advisory Committee that future oil supply and markets for oilburners appear excellent. Discussion also brought out an extensive plan for informing the public on the brighter aspects of postwar oil supply. This plan contemplates the use of a booklet already prepared which indicates a world supply of 700 billion barrels of crude oil, of which less than 100 billion barrels have yet been proved; oil for 300 years.

At a meeting of the Post War committee, January 17, W. A. Kemp presented a second progress report for his subcommittee on oil supply which confirmed and amplified the group's first report last October. Chief points developed by the further study are:

1. While there is every evidence of plenty of postwar oil for burning, the exact grade specifications are in doubt. It is not believed at this time the change in grades will be very great but some modification of the specifications seems probable. There also may be adjustments in the grade to grade price structure, though it is expected all prices will remain competitive with other fuels.

2. Previous conclusions on the postwar demand for petroleum for synthetics and other chemical products still stand. This demand is expected to be too small to affect the fuel situation.

3. The first report discussed the demand for oil to manufacture other fuels; particularly manufactured gas. It is now believed that the use of natural gas to manufacture gasoline may ease the demand for lighter ends from oil. It is also indicated that the new pipelines may be impractical for the transportation of natural gas.

4. Continued development of foreign fields has increased the expected crude yields so that the import-export equation now appears even more favorable than at the time the October report was prepared. The revised foreign oil estimates do not include consideration of the better

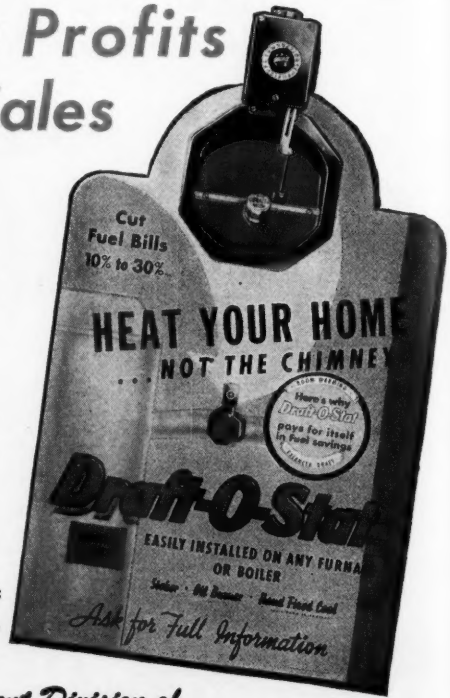
Get YOUR Share of the Profits from Draft-O-Stat Sales

THIS ACTION DISPLAY WILL HELP YOU

The demand for fuel-saving devices is greater than ever before. Many alert dealers have already taken advantage of Hotstream's amazing free offer to help them get their share of this profitable business.

HOW TO GET YOUR DISPLAY FREE

This attention arresting display features a full-size Draft-O-Stat in action. You can get one free—ready to set up and go to work for you—with an initial order of 6 or more Hotstream Model BM Motorized Draft-O-Stats. Or it may be purchased, completely assembled, for $2.80 plus net cost of two Motorized Draft-O-Stats one of which is incorporated in the display—the other packaged for sale.


Cut Fuel Bills 10% to 30%
HEAT YOUR HOME
...NOT THE CHIMNEY
Here's why Draft-O-Stat pays for itself in fuel savings
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EASILY INSTALLED ON ANY FURNACE OR BOILER
Ask for Full Information

Be a FUEL SAVING WARDEN to your customers

Order Today, or write for full information. Supply is limited.

Combustion Equipment Division of

THE HOTSTREAM HEATER CO.

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Into The Homestretch!

The Oilheating, Fueloil and Airconditioning Industry, like all patriotic groups, has given its best in the production of materials for American fighting men. It is now entering into what we hope is the last gruelling mile of the war grind, to try to give even more and better support to those who go out and face personal hazards, for America. We owe it to them to give our best, and never to relax until Victory is won.

Our Industry is also serving the homefront—supplying fuel for and servicing two and one half million oilheating and airconditioning installations. In our present undermanned and overworked condition, we are accomplishing this highly patriotic duty with amazing efficiency. It is a great tribute to the high quality of the existing equipment which our manufacturers produced and our dealers installed during the 25 years since our industry started, and to the men who did the job, that there is little serious trouble due to the thinly spread service we are able to give. Some of the equipment is many years old, and still it continues to function without trouble. Fueloil deliveries continue despite all kinds of adverse conditions.

There is another duty of an Industry in wartime that we are also fulfilling—planning for the future. How else can we shoulder the burden of giving adequate employment, proper service to the public, improve our products, and still maintain the standards and progress comparable to prewar years? We must plan, as individuals and as an industry, to resume our front rank position in the post-war era.

FUELOIL & OIL HEAT has proved its vitality since it was born of a merger of FUELOIL JOURNAL and AIR CONDITIONING & OIL HEAT four months after Pearl Harbor. It has attacked the industry's problems, instructed and advised on technical feature articles, explained Government orders, wartime oilheating trends, and it has dug for the necessary facts to help readers survive an emergency period. It has worked hard to bring a measure of stability and confidence, so much needed in the daily confusion that comes with war.

The industry's leading manufacturers have shared in this work, by using advertising pages to keep dealers informed of their present activities and future planning. In consequence, dealers have retained confidence in these companies and their products, confidence and good will that had been built in peace years, and have demonstrated this acceptance by placing replacement, repair and accessory orders. Dealers like to do business with advertisers who show their courage under difficulties and have faith in the future.

Our industry is demonstrating its usefulness to the country during the war, and can expect reasonable rewards in peacetime. FUELOIL & OIL HEAT will continue to help with the aid of advertisers and readers.

★

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American Tel. & Tel. Co.
Anchor Post Fence Co.
Automatic Burner Corp.
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Balloffet Dies & Nozzle Co.
Bell & Gossett Co.
Bowser, Inc.
Brodie Co., Ralph N.
Brown-Taylor Eng. Co.
Burnham Boiler Corp.

Catskill Metal Works, Inc.
Century Engr. Co.
Cities Service Companies (Petroleum Advisers, Inc.)
Cleveland Steel Prod. Corp.
Cole-Sullivan Eng. Co.
Commercial Filters Corp.
Conco Corp.

Delco Appliance Division (General Motors Sales Corp.)
Detroit Lubricator Co.
Dielectric Products
Dole Valve Co.
Dongan Electric Mfg. Co.

Eddington Metal Spec. Co.
Electrol, Inc.
Emerson Electric Mfg. Co.

Field Draft Division Fitzgibbons Boiler Co., Inc.

Gar Wood Industries, Inc.
General Controls Co.
General Electric Co., Bloomfield
General Electric Co., Schenectady
General Filters, Inc.
General Fittings Co.
General Oil Heating Co.
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Guardian Utilities Co.
Goodall Rubber Co.
Gulf Oil Corp.

Hago Products
Harsch & Co., H.
Harvey, Inc., Sid
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Heil Co., The
Henry Furnace Co.
Herco Oil Burner Corp.
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Hotstream Heater Co.

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Johns-Manville Corp.
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Kraissl Co., Inc.

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Little Burner Co., H. C.
Lovejoy Flexible Coupling Co.

Mack Mfg. Corp.
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May Oil Burner Corp.
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Mercoid Corp.
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Minneapolis-Honeywell Reg. Co.
Modern Heat & Fuel Co.
Monarch Mfg. Works, Inc.

National Radiator Co.
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Oil Equipment Laboratories, Inc.
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York Oil Burner Co., Inc.

domestic outlook arising from the discovery of oil in Florida, Nebraska-Montana, and revisions of Canadian estimates.

5. Developments have caused a revision of previous estimates on cost of oil from shale and coal. It is now believed that oil could be produced from these sources, should the necessity arise, at a basis that would make distillate oils available at not-too-high prices, though there is no reason to expect any sudden change from present sources of oil. The committee concludes: "From information available at this time there is enough crude petroleum in the United States for many generations to come, even with increased demand and consumption."

Means of making the industry's confidence in the future oil supply available to the public were uncovered at the directors' meeting when President Lewis disclosed that six manufacturing companies have underwritten a publicity program to be carried on over the signature of Oil-Heat Institute. General advertising will tell the story of petroleum's enlistment in war, and its return when other scarce products are released for general distribution. A 20-page illustrated booklet will be available for general distribution, showing authentic estimates of petroleum supplies, and containing a large world map of the areas where oil has been discovered and is indicated.

M. A. Powers, chairman of the subcommittee on cooperation with the boiler and furnace manufacturers reported by letter on a meeting with furnace men. This meeting developed the need for burners (1) to burn less than one gallon per hour reliably in furnaces of 60,000 to 100,000 Btu per hour output; (2) such burners to have rugged and simple adjustment, and developing (3) maximum stack temperature of 500° at .02 to .03 inches of draft and producing 10% to 11% CO_2, applied (4) so that no part of the furnace will reach a temperature of more than 930° above room temperature as provided in CS 109-44, effective in March 1944. It was also indicated that there is need for satisfactory burners for waters heaters, modulating burners, and burners producing a vertical fire.

Frank Faust reported the work of the Engineering Committee with the groups in the heating industry to develop better standards. He also reported the need for a comprehensive course of instruction for oilburner service men, discussion of which developed a three-way need: (1) for an immediate course of instruction on the general aspects of oilburner service, to be followed later by (2) a more comprehensive service manual, and eventually (3) a complete and up to date technical handbook.

John Rainbault, reporting for the committee on postwar markets, reviewed the recent history of the oilburner and allied industries in a complete statistical summary for the guidance of the industry's market planners. Figures on building in recent years indicated the increasing importance of small homes. Homes, both of the one- and two-family types, costing from $4000 to $7000 have increased consistently in recent years at the expense of the higher cost homes.

The OHI annual meeting and the next sessions of the directors and the Post War Committee will be held at New York, March 12 to 14.

QUIET
MAY
OIL BURNERS
The war isn't over yet—not by a long shot! The boys are still battling it out. And the May Oil Burner Corporation is still on the firing line, supplying Uncle Sam with many vital war needs.
MAY OIL BURNER CORP.
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Saving Fuel FOR VICTORY!

Your Opportunity to Serve the Nation . . .

AND MAKE NEW FRIENDS *for* POSTWAR WORK!

SAVING fuel and material for the war effort is your first duty now. Fortunately, it is also your best way of getting acquainted with new families and making new friends who will build new homes when the Victory is won. By recommending and installing Thrush Water Circulators and Controls you can reduce fuel consumption and increase home comfort. If you are not familiar with Thrush Summer-Winter Hot Water Heating Systems see your wholesaler today or write Dept. C-2.

BUY WAR BONDS

H. A. THRUSH & CO., PERU, INDIANA

fueloil & oil heat

Ration Amendment 92, for Additional Fueloil

AMENDMENT 92 to the fueloil rationing regulations became effective January 6, outlining the conditions under which consumers may get fueloil in addition to their original ration allotments.

Designed primarily to put in clearer legal form the existing policy covering the several categories in which a user should rightfully have more oil because of unusual circumstances, the amendment also provides emergency hardship procedure to help people who are simply out of oil and coupons.

This last provision can only become operative when decreed by regional directors, and the present activity under this provision is described in an article on page 48.

The principal provisions of the amendment are contained in the following clauses:

§ 1394.5342 *Additional rations when current ration insufficient for specified purposes*—(a) *Current ration insufficient for specified purposes.* An additional ration for heat or hot water may be allowed by the Board if it finds that the current ration is insufficient because the applicant has used, or requires, more fuel oil:

(1) *Sick and infirm persons.* For the care or treatment of a person who is sick or infirm, or for the examination or treatment of patients in a hospital or sanitorium or in other buildings used for those purposes by a duly licensed physician, surgeon, dentist, osteopath, chiropractor, or religious practitioner (other than a minister). However, in the case of premises other than a private dwelling, the additional ration may be allowed only for use in a space heater, unless the building is a hospital, sanitorium or other building primarily used for the care and treatment of the sick or of patients.

(2) *Schools, orphanages and homes for the aged.* For the care of children under 4 years of age in a school or orphanage, or for the care of persons in a home for the aged.

(3) *Exhibits.* For the care or maintenance of exhibits in an aquarium, zoological or botanical garden, art gallery, museum, or similar public establishment, maintained by an educational, charitable or governmental institution.

(4) *Process, research and experiment.* For conducting an industrial, agricultural or extractive process, or a research or experimental operation, depending upon temperature control.

(5) *Public health, safety or war work.* For conducting, in non-residential premises, an activity or operation essential to the public health or safety or the war effort, which can be performed efficiently only at a higher temperature.

(b) *How the additional ration for these purposes is figured.* The additional ration shall be the amount of fuel oil, in addition to the current ration, required to furnish the additional heat or hot water needed.

§ 1394.5343 *Additional heat rations for children under 4 years old*—(a) *When allowed.* An additional ration for heating a private dwelling (other than a house trailer) or for heating other residential premises using a space heater may be allowed if the Board finds that one or more children less than 4 years of age regularly occupy the premises and the current heat ration does not include a children's allowance under §§ 1394.5256 (b) or 1394.5319 (a) (2).

(b) *How the additional ration is figured*—(1) *Central heating equipment in private dwellings.* If the ration is for use in central heating equipment in a private dwelling, the additional ration will be the figure found by multiplying the amount specified in § 1394.5256 (b) for the zone in which the dwelling is located by the appropriate percentage figure determined from Table VIII in § 1394.5851 (e). The appropriate percentage figure is shown opposite the date the occupancy of the child or children began, listed under the weather station nearest the Board. If that date is not listed, the appropriate percentage figure is determined by the Board from the two dates between which that date of first occupancy falls.

(2) *Space heaters in any residential premises.* If the ration is for use in a space heater in residential premises, the additional ration shall be the amount determined by the Board to be needed because of the occupancy of the child or children under 4 years old, but not more than the amount which would be allowable for central heating equipment.

§ 1394.5344 *Additional heat rations in certain residential premises because of increase in space heated*—(a) *When allowed.* An additional ration for heating a private dwelling (other than a house trailer), or for heating other residential premises using a space heater may be allowed if the Board finds that the floor area regularly used for necessary living and sleeping quarters and occupational purposes has increased over the amount included in

WHEN restrictions on heating equipment will be eased . . .

WHAT tremendous part of national purchasing power will be spent on home improvement . . .

WHO will be in the most favorable position to cash in on these opportunities . . .

***but* WE DO KNOW . . .**

. . . that the dealer with a sound franchise on dependable automatic coal-burning equipment will be "sitting pretty."

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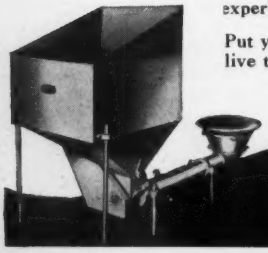
Put your name on our mailing list for live tips on "Things to Come."



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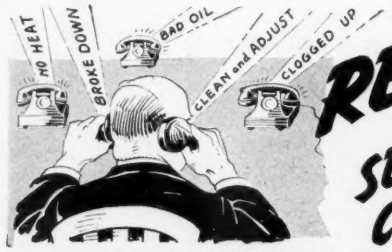
CATSKILL, NEW YORK



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POORER grades of burning oils and acute labor conditions are no doubt putting a terrific strain on your ability to give proper service to your customers. Get away from these adjustments and cleaning difficulties by selling KLEEN-FLO Fuel Oil Conditioner. KLEEN-FLO helps preserve equipment and increases oil burner efficiency — improves combustion — reduces carbon and soot formation — eliminates "puff backs," odor and smoky chimneys — overcomes water and sludge. One quart of KLEEN-FLO conditions *500 gallons of oil* — simply add thru oil fill line. Tested, approved and used by many of the country's great industrial plants. Write for profit-making facts today.

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NATIONAL N·R RADIATOR features

ECONOMICAL, FUEL SAVING, 5 FLUEWAYS EXTENDED HEATING SURFACES

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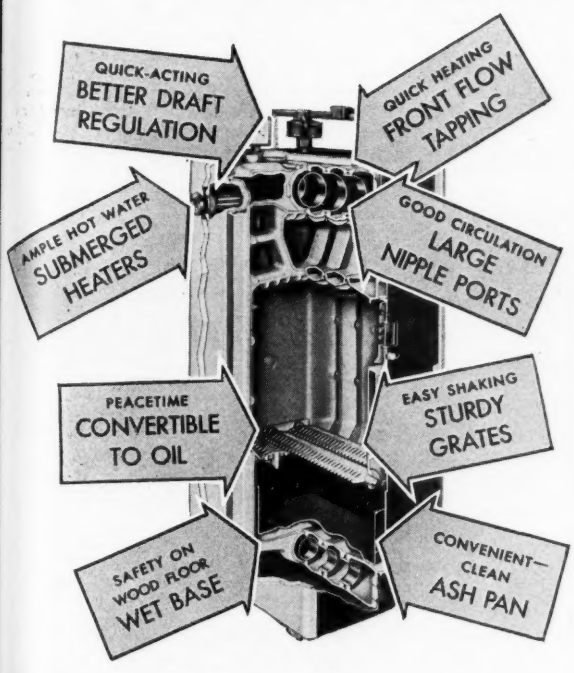
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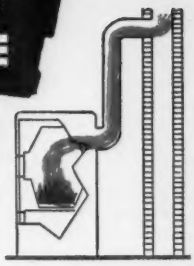
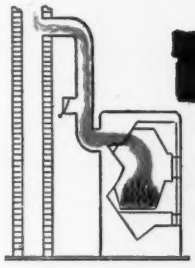
50 YEARS OF SERVICE TO THE HEATING INDUSTRY

fuel oil & oil heat

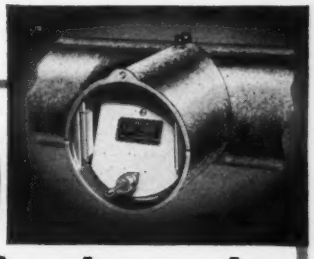
WHEN HEAT GOES UP THE CHIMNEY LIKE THIS





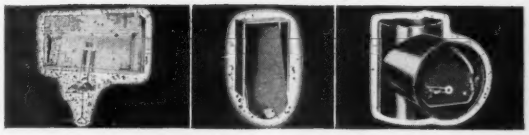
INSTEAD OF STAYING INSIDE LIKE THIS

INSTALL A DRAFT CONTROL Like This

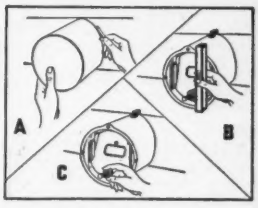


FIELD

The Line's Complete and . .



INSTALLATION'S SIMPLE AS ABC



A Hold collar snugly against stove pipe in correct position and mark outline on pipe. Snip hole in pipe ½" smaller than mark; snip slits ½" deep around hole.

B Strap collar to pipe; bend ½" slits into collar. Fasten control into collar and true control up and down and sideways by checking with carpenters spirit level for accuracy.

C Factory balanced, control requires only a simple hand adjustment for the particular installation. Set for minimum draft consistent with combustion and heat demands as required.

FIELD CONTROL DIVISION

H. D. Conkey & Co.

Mendota, Illinois

figuring the current ration. However, the Board shall not consider any floor area in excess of the amount allowed in § 1394.5258.

(b) *How the additional ration is figured.* The Board may determine the additional amount needed because of the increase in floor area. However, the amount may not exceed the figure found by taking the difference between the midpoint of the range for the floor area included in figuring the current ration and the midpoint of the range for the increased floor area and by multiplying that difference by the appropriate percentage figure determined from Table VIII in § 1394.5851 (e). The appropriate percentage figure is shown opposite the date the increase in floor area occurred, listed under the weather station nearest the Board. If that date is not listed, the appropriate percentage figure is determined by the Board from the two dates between which that date of increase falls.

§ 1394.5345 *Additional hot water rations in private dwellings*—(a) *When allowed.* An additional ration for furnishing domestic hot water to a private dwelling by means of equipment other than an attachment to a space heater or to cooking equipment may be allowed if the Board finds that the number of persons regularly occupying the dwelling has increased over the number included in figuring the current ration.

(b) *How the additional ration is figured.* The additional ration shall be:

(1) In the case of central heating equipment, two-thirds (2/3) of the figure obtained by adding five (5) gallons for each additional person regularly occupying the dwelling, and multiplying that sum by the number of months for which the additional ration is needed.

(2) In the case of separate water heating equipment, the amount determined by the Board to be needed, but not more than the amount which would be allowable for central heating equipment.

§ 1394.5346 *Additional heat or hot water rations in premises other than a private dwelling, because of increase in normal requirements*—(a) *When allowed.* An additional ration for furnishing heat or hot water to any premises (other than residential premises using a space heater only or any private dwelling) may be allowed if the Board finds that the applicant's normal requirements for heat or hot water or both have substantially increased over the requirements which were the basis for figuring the current ration.

(b) *How the additional ration is figured.* The additional ration shall be two-thirds (2/3) of the amount of fuel oil the Board determines to be needed to meet the increase in the applicant's normal requirements.

§ 1394.5347 *Additional heat or hot water rations to avoid undue and immediate hardship*—(a) *When allowed.* An additional ration for furnishing heat or hot water to residential premises may be allowed if the Board finds that undue and immediate hardship will be suffered by the applicant because he does not have sufficient fuel oil on hand and unexpired ration evidences or ration credits to meet his current minimum requirements for heat or hot water, or both, even though he has taken all reasonable measures, within the limits of his financial ability, to reduce his consumption of fuel oil. However, an additional ration for this purpose may not be issued until the Regional Administrator has declared, upon receipt of such information from the Washington Office, that there is available in the area where the applicant is located an adequate supply of fuel oil for the purpose. The applicant must include in his statement, in addition to the matters mentioned in § 1394.5341 (b), an explanation of all the efforts he has made to save fuel oil.

(b) *How the additional ration is figured.* The additional ration shall be the minimum amount of fuel oil the Board determines the applicant needs to avoid the undue hardship.

§ 1394.5348 *Issuance of additional rations.* After the Board figures the amount of the additional ration, it will issue Class 3 coupon sheets for that amount. However, if the applicant is a depositor for the establishment, the additional ration will be issued in a fuel oil deposit certificate.

5. Section 1394.5553 is revoked.
6. Section 1394.5554 is revoked.
7. Section 1394.5667 is added as follows:

§ 1394.5667 *Unavoidable loss of fuel oil.* (a) A consumer who sustains an unavoidable loss, by theft, fire, or accident, of fuel oil acquired in accordance with the provisions of Ration Order No. 11, may apply immediately after the loss occurs, in writing, to the Board which issued a ration to such consumer pursuant to which such fuel oil was acquired, for coupons or if he is a depositor, a fuel oil deposit certificate, for the amount of the fuel oil so lost. The applicant shall state:

(1) The time, manner and circumstances of such loss;

(2) The steps taken to prevent further loss;

(3) The number of gallons of fuel oil so lost.

(b) If the Board is satisfied that the applicant has sustained an unavoidable loss of fuel oil, by theft, fire or accident, and that the applicant has taken all possible steps (within the limits of his financial ability) to prevent such further loss, it may issue to him Class 3 coupon sheets or, if he is a depositor, a fuel oil deposit certificate, for the amount of fuel oil so lost.

Recommended for NEW Refractory Economy

FOR BONDING
J-M Hellite is ideal for bonding firebrick with thin joints, wash-coating and patching old linings. Settings are strong and permanent. Comes ready-mixed, works easily, sets without heat.

FOR POURED LININGS
J-M Firecrete handles as easily as ordinary concrete. Will not shrink, crack or disintegrate. Ideal for rotary-burner hearths, combustion chambers, etc.

FOR SEALING
J-M Firelte is an asbestos furnace cement that effectively seals clean-out doors, flue pipes and other furnace parts. Supplied ready-mixed, is easily worked and applied. Adheres tightly to castings, sheet metal or any other clean surface. Air sets without heat.

Write for New Edition of Booklet RC-8A

• Time-tested on thousands of jobs, these durable J-M Refractory Products provide maximum assurance of long life and freedom from maintenance. They are stocked by leading distributors throughout the United States . . . are easily obtainable on short notice. For the name and phone number of your nearest supplier, write Johns-Manville, 22 East 40th Street, New York 16, N.Y.

JOHNS-MANVILLE JM REFRACTORIES FOR OIL BURNERS

WE CAN'T SELL YOU ANY OF OUR

Bomb fuses
High Frequency Cans
Aircraft bolts
Solenoid Housings
Aircraft radio parts
Bomb release mechanisms
Submarine locater parts
37 mm. and 57 mm. gun parts
Walkie-Talkie radio parts
Etc., etc., etc.,

BUT

After this is over you can bet your bonds we will be ready to sell you the most up-to-date equipment in the business.

OIL EQUIPMENT LABORATORIES
Elizabeth, New Jersey

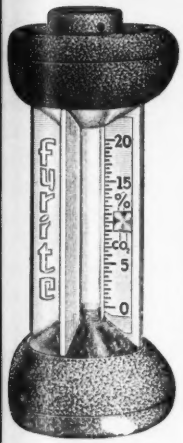
Help Uncle Sam CONSERVE VITAL WAR FUELS

USE THESE MODERN

COMBUSTION TESTING INSTRUMENTS

to get accurate

FUEL SAVING FACTS!



CO_2 ANALYZER

DRAFT GAUGE

STACK THERMOMETER

FIRE EFFICIENCY FINDER

Cooperate with our government's fuel conservation program and build your reputation for money-saving, expert service . . . by using these simplified instruments to make efficiency tests of heating plants.

The easy-to-use FYRITE quickly indicates CO_2 in the flue gas, thus showing whether the fuel receives the proper amount of air. The Stack Thermometer test shows how well the furnace absorbs the heat of fuel burned. The unique FIRE Efficiency FINDER correlates CO_2 and stack temperature readings to show at a glance preventable chimney losses. The handy dry-type DRAFTRITE gauge is indispensable for properly adjusting the draft.

The Department of Agriculture and the FHA have proved that fuel consumption in most domestic heating plants can be cut up to 25% or more by making scientific tests, repairs, and adjustments. That's why you help your country, your customers, and yourself by equipping with these precision-built instruments that quickly give you fuel-saving facts. Write for particulars and net prices.

HEATING SERVICE DIVISION

BACHARACH INDUSTRIAL INSTRUMENT CO.

7000 BENNETT STREET • PITTSBURGH 8, PA.

NATIONAL DISTRIBUTORS—**COLE-SULLIVAN ENGINEERING CO**

Fueloil & oil heat

...JUST OFF THE PRESS

NEW CATALOG and PERFORMANCE DATA on Single Inlet Blower Wheels and Housings

CONTAINS: A clear, quick, easily understood reference guide on Lau Single Inlet Blower Wheel and Hub Dimensions—Lau Standard Blower Housing Dimensions—Lau Universal Housings—Lau Wheel Performance Curves from 5" x 2½" to 18" x 9" . . . eleven complete charts compiled in accordance with A.S.H.& V.E. and N.A. F.M. Test Codes. Of particular interest is the Lau Wheel Length Selector Curve. Here's an easy way to select the right air handling equipment, to meet your present war needs for wheels, housings, or complete assemblies. Let this Catalog also be a guide to you in postwar planning.

✓ *Send for your Free Copy of Bulletin No. 75*

THE LAU BLOWER COMPANY
2001-2009 Home Avenue
DAYTON 7, OHIO

Hardship Rations Invoked In Five OPA Regions

WHEN IT BECAME APPARENT through field studies that some consumers were completely out of fueloil and valid coupons, OPA's Rationing Division on January 17 wired regional administrators at Boston, New York, Cleveland, Chicago and Dallas to invoke the hardship clause in Amendment 92.

The amount to be issued is to be determined by boards referring to the late applicant table (Table VIII) in the regulations, and giving them the percentage of a year's ration represented by the difference between the percentage shown in the table for the date the application is made and the percentage for February 8, the start of Period 4. In other words, the consumer who ran out of oil could get just enough to carry him until the next valid coupons could be used, and then he is expected to finish the season on his Period 4 and 5 coupons.

Since about one-third of the average ration this season was given in fixed value coupons (inventory and change-makers), the remaining coupons average for each period about 13½% of the year's ration. This means that the consumer who got into trouble and got temporary relief is going to have to try and live on 27% of his ration for the remaining 40% of the heating year.

If people ran out of coupons for any reason other than prodigality, they could of course get relief under the other provisions of Amendment 92. If they had to keep higher temperatures due to family illness, if they had an increase in number of people, or if for any other of seven stated reasons the difficulty was beyond their control, the regulations provide help without invoking the hardship clause.

Shortly after the wires had gone out invoking the hardship clause, industry men pointed out that if any considerable number of these hardship cases got help to last them to February 8, they would all have to have a delivery the moment their Period 4's were valid and this would make an unmanageable peak situation. Moreover, if the hardship ration were to be given only a few days before the end of the period, the gallonage would be so small as to preclude economical delivery. It is expected that hardship allowances will reach their peak in the last week of the period, so there would be an avalanche of small allowances.

To avoid running into this situation, the Rationing Division concluded best to instruct boards to increase the average issuance by an amount to be borrowed from the applicant's future period coupons. The applicant will get his hardship ration, plus enough coupons exchanged from Period 5 or 4 to current ones, in such total amount as will give the dealer a reasonable drop, up to the total capacity of the customer's tank. This will stagger the future delivery requirements among those who get hardship allowances, since the boards are asked to particularly watch this, giving different people different amounts, but in no case a small amount. This instruction was wired to regional administrators on January 21st.

The plan will cause dealers some extra work, in that coupons must be brought in to the board for making the exchange, but in turn it will ease the truck and driver manpower load, which is the most critical present aspect of fueloil distribution.

Many elements of the industry urged

MONARCH BURNER

Accessories

NOZZLES: War orders are taking most of our production but we are *still* shipping emergency orders for one or two nozzles promptly.

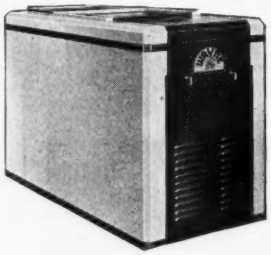
AIR CONES & STABILIZERS: 3½", 4", 4¼" 4¾" and 6" tube sizes in stock.

REGULATING VALVES & STRAINERS: Immediate shipment can be made of some models of piston and double diaphragm valves and Type E strainers.

Write for Catalog D

MONARCH MFG. WORKS, INC
E. WESTMORELAND & SALMON STS. PHILADELPHIA 34, PA.

WAYNE OIL-FIRED



FURNACE UNITS

60,000 to 400,000 B.T.U.

PROMPT SHIPMENT

on proper priority

The complete line of Wayne oil-burning furnaces and burners is again available.

WAYNE OIL BURNER CO., 801 Glasgow Ave.
Fort Wayne 4, Indiana

WAYNE'S V-DAY LINE WILL BE COMPLETE
OIL-FIRED, GAS-FIRED, COAL-FIRED FURNACES, STOKERS, BOILERS, WATER HEATERS. CONVERSION BURNERS FOR OIL AND GAS.

LINE UP WITH WAYNE FOR POST WAR PROFITS

how's YOUR quota?

. . . YOUR 4TH WAR LOAN QUOTA

WHETHER your plant meets its quota, or fails, lies largely in *your* hands. Your leadership can put it over—but if you haven't already got a smooth running, hard hitting War Loan Organization at work in your plant, there's not a minute to lose.

Take over the active direction of this drive to meet —*and break*—your plant's quota. And see to it that every one of your associates, from plant superintendent to foreman, goes all-out for Victory!

To meet your plant's quota means that you'll have to hold your present Pay-Roll Deduction Plan payments at their all-time high—plus such additional amounts as your local War Finance Committee has assigned to you. In most cases this will mean the sale of *at least* one $100 bond per worker. It means having a fast-cracking sales organization, geared to reach personally and effectively every individual in your plant. And it means hammering right along until you've reached a 100% record in those *extra* $100 —or better—bonds!

And while you're at it, now's a good time to check those special cases—*growing more numerous every day*—where increased *family* incomes make possible, *and imperative,* far greater than usual investment through your plant's Pay-Roll Deduction Plan. Indeed, so common are the cases of two, three, or even more, wage-earners in a single family, that you'll do well to forget having ever heard of '10%' as a reasonable investment. Why, for thousands of these 'multiple-income' families 10% or 15% represents but a paltry fraction of an investment which should be running at 25%, 50%, or more!

After the way you've gone at your wartime *production* quotas—and topped them every time—you're certainly not going to let anything stand in the way of your plant's breaking its quota for the 4th War Loan! Particularly since all you are being asked to do is to sell your own people the finest investment in the world—*their own share in Victory!*

LET'S ALL BACK THE ATTACK!

This space contributed to Victory by

FUELOIL & OIL HEAT

This is an official U. S. Treasury advertisement—prepared under auspices of Treasury Department and War Advertising Council.

fueloil & oil heat

Washington to take care of the distress cases by advancing the validity date of Period 4 coupons. This was finally determined inadvisable for three reasons: the banks exacted a promise last Summer that if ration banking for fueloil were started validity dates would be frozen; again, it would have been necessary to advance the date by two weeks to relieve the mounting distress cases; most important, however, was that it would convey to the general public the idea that fueloil is plentiful, a completely erroneous existing impression that must be deflated rather than encouraged.

OPA, PAW Move to Untangle Overlapping Jurisdictions

IN A NUMBER OF SPECIAL rationing and supply situations, PAW and OPA's Rationing Division have had parallel or overlapping jurisdictions and this has caused considerable inconvenience to the public, as well as extra work for the agency staffs.

Technically, of course, there could be no overlapping, since the two agencies do different basic jobs. PAW allows or forbids the industry to deliver oil, while OPA allows or forbids a local board to issue a ration, but reduced to public inconvenience they're one and the same.

Several types of cases are involved, and while most of them originally had to do with conversions to coal, no longer required, the problems still persist for now they affect reconversions. The principal situations are:

1. The simple hardship case, where coal could not be used . . . the old lady with lumbago who couldn't shovel coal. PAW had sole jurisdiction here, and could issue exceptions to PDO 13, which OPA boards were required to honor.

2. Standby cases, where the consumer had equipment to burn both coal and oil. Both agencies required maximum use of the coal facility before any oil could be burned. PAW could issue exceptions to this under PDO 13, and last Fall when residual oil seemed too plentiful in the East, they allowed numerous large consumers to stop burning coal and go to oil —an aggregate amount representing about 40,000 barrels a day consumption. It later proved that this had been too optimistic and reecntly PAW forced back to coal about 15,000 daily barrels of this, in addition to notifying certain large consumers that they could not buy additional residual oil before March. If a standby case was industrial, PAW was the sole judge, but if it was a heating consumer, either agency could decide and occasionally they ruled in opposite directions.

3. Technical utilization factors. (In Washington slang, TUF cases) : If a plant converted to coal and could not get the necessary results with that fuel, in industry or in heating, and this was proven beyond doubt, the user could go back to oil, with either or both agencies making the determination.

4. Unavailability of an alternate fuel. If no other suitable fuel could be obtained, the consumer could go back to oil—again, either agency would make the decision.

For some weeks the Washington staffs of the two agencies have been trying to equitably divide the responsibilities. The only thing definitely determined to date is that it must and will be done. The lawyers are now working out the necessary regulation changes to effectuate the following plan, on which preliminary agreement seems reached:

1. OPA to have sole jurisdiction over any of these special circumstances involv-

Still on the trail of FINER FUELS

Today's Sunheat Furnace Oils are especially marketed for domestic oil burners by Sun Oil Company—long a pioneer in petroleum research and development.
Tested and re-tested innumerable times during production, Sunheat Furnace Oils are yielding many a clue to help us maintain the fact that

. . . FOR HOT HEAT
. . . FOR SURE HEAT
IT'S SUNHEAT!

—you can recommend Sunheat with confidence. For details consult our nearest branch or

SUNHEAT FURNACE OILS

SUN OIL CO., PHILADELPHIA

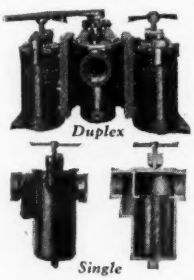
Proven by PERFORMANCE—

KRAISSL

Filters • Strainers • Pumps for FUEL OIL

Intelligent engineering is only the starting point. Consistent on-the-job performance over many years provides practical endorsement of KRAISSL design and manufacture.

Class 72 Strainers and Filters



Single and Duplex types for suction or discharge service—any practical degree of filtration in units designed for low pressures as well as up to 500 lbs. hydrostatic test—easily removable filter basket insures quick cleaning.

Class 60 Heavy Oil Pumps

Standard equipment wherever independent pump and motor sets or booster pumps for pump-type burners are required.

Kraissl-Trumbull No. 522 Fuel Pump Unit

Rugged, dependable wall pump for gravity type oil burners having burning capacity of not more than 3 gals. per hour—Approved by Underwriters' Labs., Inc.

Submit your fuel-line problems to KRAISSL engineers—literature and prices on request.

THE KRAISSL COMPANY
INCORPORATED
295 Williams Ave., Hackensack, N. J.

ing space heaters (including commercial) and cooking equipment. There are many of these cases, but small total gallonage at stake, and it is best to handle them quickly at the local source.

2. PAW to have sole jurisdiction over Type 1102 cases, covering industrial and general non-heating uses.

3. OPA to decide on availability of alternate fuels in heating cases, but to seek the advice of inter-agency committees in each district, these to be set up in an investigating capacity.

4. PAW to have authority in all instances on the other categories: standby, technical utilization and coal-using hardship (except for space heaters or cooking).

When consummated, providing it's done soon, the project will be praiseworthy, for the greatest present curse among War Agencies is lack of clear separation of authority.

There was pressure from field offices to carry the clean-up job farther, making a clear-cut division that would give OPA full authority over all residential users and give PAW jurisdiction over all non-residential and industrial cases. Their reasoning was that OPA boards, on the spot, could better understand all circumstances surrounding the many residential cases, while PAW, getting only large cases and few in number would be able to send engineers to investigate.

But Washington wouldn't go that far, feeling it would lose too much control of demand . . . probably true, but if the project as now planned goes through, the little old lady who can't shovel coal into a boiler will still have to wait for a PDO 13 exception from PAW's district office in New York or Chicago.

Imperfect as it is, the new project is so much better than what we now have, that it is best to put nothing in the way of its speedy enactment if we are to get relief this season. Perhaps before next Fall those who dragged their feet on further simplification will see the situation differently.

◈

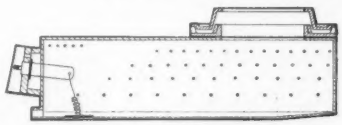
NEW YORK OIL HEATING ASSOCIATION members are placing group advertising in the classified telephone directory. First to appear is in the Bronx book where seven members are listed under the association's trade-mark and six lines of introductory text.

YOUR BIGGEST POST WAR HEATING PROFITS

WILL COME FROM THE SALE OF VAPORIZING TYPE OIL-BURNING EQUIPMENT

Postwar planning committees in the Heating Industry advise us that *many* new postwar homes will be adequately heated with two quarts of oil per hour or less, that the *majority* will be heated with less than three quarts per hour – and that their owners will demand automatic oil heat.

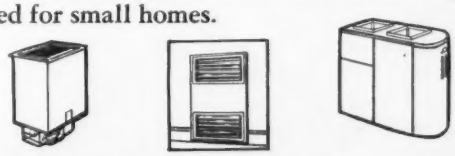
As you know, this demand cannot be met by pressure type oil-burning equipment, which is not satisfactory in these small capacities. We repeat, your biggest postwar heating profits will result from selling vaporizing type oil-burning equipment...AND



H. C. LITTLE LEADS THE FIELD

With the Only Automatic Vaporizing Burner Employing Electric Ignition

In fact, H. C. Little dealers will be the only heating equipment dealers in America who can meet the postwar demand with factory assembled units which combine fully automatic operation, electric ignition, thermostatic control and vaporizing burners. These units include oil-burning floor furnaces, wall furnaces, circulating heaters and hot water heaters – a complete range of sizes and types of automatic oil heat especially designed for small homes.



WRITE FOR FREE BOOKLET

H. C. LITTLE BURNER CO.

Send for a copy of "How to Get Real Profits in Postwar Heating." Find out how we can go after that postwar market together.

SAN RAFAEL, CALIF. — Branches in Principal Cities

Wisconsin Association Elects Schroeder President

AT THE ANNUAL MEETING of the Wisconsin Oil-Heat Association held in Milwaukee on December 28th, 1943, Walter J. Schroeder was elected president for his second term and articles of organization to incorporate the Association were filed with the Secretary of State.

Schroeder is also Chairman of the Wisconsin Petroleum Industries Committee and Division Manager of Deep Rock Oil Company, Milwaukee. He started with Deep Rock in 1924 as a salesman and has been connected with the oil business since 1918.

The Wisconsin Oil-Heat Association was organized in March, 1922 and is probably the oldest Association in the United States, being in continuous operation since it was formed.

During the past 20 years, the Association has spent nearly $100,000 advertising the comfort, convenience and economy of oil-heat in Wisconsin, using exhibits at the Annual Home Shows, newspapers, radio, billboards and direct-by-mail. All such advertising has been handled through its advertising agency under the supervision of a very fine advertising committee headed by Mr. C. G. Kettinger of Wadhams Oil Company.

Other officers elected at the Annual meeting were Howard H. Elder, Vice President, of Cities Service Oil Company; John Weiler, Treasurer, of Milwaukee Welded Products Inc.; Directors: Charles N. Smith, Callaway Fuel Company; E. R. Benson, Oil Heating Sales Company; J. H. Shellenberger, Shellenberger-Gregg Company; and E. J. Gallabini, Pertex Corporation.

◈

NATIONAL BUREAU OF STANDARDS, Washington, recently issued Letter Circular LC738, "Notes on Domestic Fuel Oil Conservation." Copies may be obtained without charge by writing the Bureau.

OIL HEAT INSTITUTE OF NEW ENGLAND held regional meetings on January 26 at Fall River and New Bedford, Mass., to discuss Ration Amendment 92, WPB's Revised L-74, Selective Service Policy changes and CMP 9A on repair and maintenance parts.

Massachusetts Association Elects Officers, Directors

AT ITS ANNUAL MEETING January 18 at Boston's Hotel Lennox, the Massachusetts Oil Heating Association elected for the following year three officers and seven directors.

Oredon S. Hobbs is the new president, C. Bernard Leacy is vice-president and Fred N. Beckwith continues as secretary-treasurer. The directors are William J. Breed of Lynn, Fred W. Heaney of Watertown, A. E. Gustafson of Melrose, J. L. O'Sullivan, Jr., of Dedham, Allan A. Griffin of Cambridge, Joseph A. Leone of Lawrence and Thomas Colter of Boston.

◈

UNDERWRITERS LABORATORIES, INC., Chicago, has issued a new roster of all oil-burners at present listed for labels, giving name of company, models listed and their approved oil grades, also designating those models that have CS75 approval. Companies listed for conversion burners number 152; for units 61.

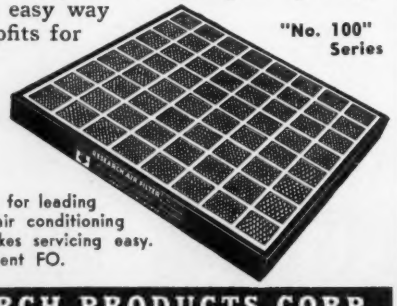
Get Your Customers To Change Furnace Filters *Regularly!*

RESEARCH AIR FILTERS

Clean The Air — Cut Housework *and improve furnace operation*

Check the filters of the furnaces you service . . . and suggest *filter changes regularly* . . . it's an easy way to *extra* profits for you!

"No. 100" Series



Send for FREE Book

Lists filter sizes for leading furnaces and air conditioning units . . . makes servicing easy. Write Department FO.

RESEARCH PRODUCTS CORP., MADISON, WIS.

*ACCURACY

Things to look for when you're buying Gauges

ACCURACY—Rochester liquid level and pressure gauges used in petroleum applications are individually calibrated, pass rigid inspection. Sealed one-piece gauge cases, special overload-compensating diaphragm retainers, pulsating dampeners, absence of links and gearings all mean more ACCURACY in gauging. Rochester gauges are remarkably free from vibration, moving parts are machined to close tolerances from long-wearing monel metal, nickel silver, stainless steel.

Consult our Engineering Department for help on your gauging problems. There is no obligation involved.

ROCHESTER MANUFACTURING CO.

38 ROCKWOOD STREET ROCHESTER 10, N. Y.

Makers of Fine Gauges

"FOR THE TRUE INSIDE STORY"

ROCHESTER Individually Calibrated GUARANTEED ACCURATE INSTRUMENTS

FOR ACCURATE LIQUID-LEVEL, PRESSURE and TEMPERATURE INDICATION

L-R FLEXIBLE COUPLINGS

WORK HELD UP-
by lack of couplings
for OIL BURNERS, AIR-CONDITIONING, ETC.?

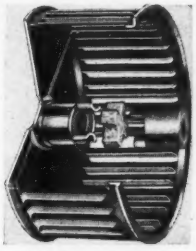
YOU CAN HAVE THEM *NOW!*
Immediate Deliveries, any quantity from stock.

L-R Type UX Double-flex

L-R Type IA Uniflex

L-R Non-Lubricated Couplings are supplied for every requirement—oil heat, air-conditioning, pumps, and other small machines up to steel mill sizes.

Write for Details and Prices



Manufacturers make blower wheels with L-R jaws integral with hub.

Couplings furnished 2 or 3-piece all sizes. Pat. and Pats. Pend.

LOVEJOY FLEXIBLE COUPLING CO.
5012 West Lake Street Chicago 44, Illinois

INVESTIGATE THE

Teesdale

BARA-MATIC DAMPER

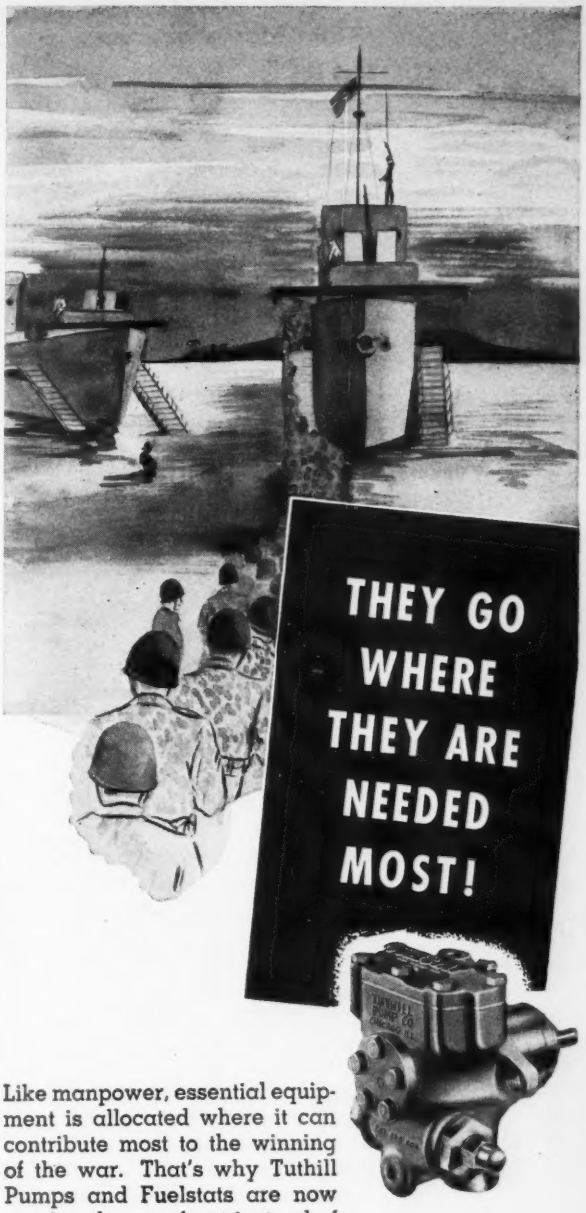
NEW *in Design*

SELLS *on sight*

Scientifically controls the heat-flow, saving up to 30% loss. Operates efficiently on Oil and Gas Burners, Automatic Stokers and Plants burning Coal and Coke. Easy to install, simple and safe!

For full facts about the "Teesdale Bara-Matic Damper," address the . . .

TEESDALE MANUFACTURING CO.
427 Market Avenue
GRAND RAPIDS 3, MICHIGAN



Like manpower, essential equipment is allocated where it can contribute most to the winning of the war. That's why Tuthill Pumps and Fuelstats are now serving the war front instead of the home front.

In the meantime, Tuthill equipment now on the job at home can be kept operating at peak efficiency through servicing or reconditioning at our authorized service stations or at the factory.

★
SERVING
ARMY
NAVY
AIR FORCE
MERCHANT
MARINE

TUTHILL PUMP COMPANY
939 EAST 95TH STREET • CHICAGO 19, ILLINOIS

DEGREE DAY TABLES

ONE MONTH ONLY					SEASON TO DATE			
	December		Percent		(Sept. 1 to Dec. 31)			Percent
Normal	1942	1943	Change*		Normal	1942	1943	Change*
1225	1313	1297	+ 5.9	Albany	2421	2704	2824	+ 16.6
640	660	634	— 0.9	Atlanta	1175	1109	1231	+ 4.8
850	928	863	+ 1.5	Baltimore	1647	1611	1726	+ 4.8
1000	1132	1097	+ 9.7	Boston	2087	2169	2220	+ 6.4
1096	1233	1188	+ 8.4	Buffalo	2384	2493	2718	+ 14.0
1098	1307	1163	+ 5.9	Chicago	2235	2592	2556	+ 14.4
953	1046	1022	+ 7.2	Cincinnati	1892	1984	2078	+ 9.8
1014	1187	1137	+ 12.1	Cleveland	2094	2329	2463	+ 17.6
571	530	633	+ 11.8	Dallas	944	863	1034	+ 9.6
991	867	927	— 6.5	Denver	2272	2100	2044	— 10.0
1188	1314	1165	— 1.9	Des Moines	2424	2563	2579	+ 6.4
1119	1223	1167	+ 4.3	Detroit	2439	2493	2587	+ 6.1
1129	1195	1155	+ 2.3	Grand Rapids	2456	2492	2606	+ 6.1
1092	1199	1183	+ 8.3	Hartford	2217	2346	2469	+ 11.4
1245	1155	1293	+ 3.9	Helena	3074	3027	3031	— 1.4
331	270	371	+ 12.1	Houston	520	416	607	+ 16.7
1026	1140	1066	+ 3.9	Indianapolis	2053	2121	2229	+ 8.6
986	1059	1069	+ 8.4	Kansas City	1877	1966	2110	+ 12.4
248	209	255	+ 2.8	Los Angeles	383	354	357	— 6.8
875	956	928	+ 6.1	Louisville	1677	1754	1780	+ 6.1
1195	1391	1188	— 0.6	Milwaukee	2515	2865	2686	+ 6.8
1404	1535	1287	— 8.3	Minneapolis	3005	3218	3069	+ 2.1
305	255	349	+ 14.4	New Orleans	475	378	608	+ 28.0
930	1034	1008	+ 8.4	New York	1859	1844	1997	+ 7.4
1161	1264	1150	— 1.0	Omaha	2310	2485	2516	+ 8.9
887	1000	925	+ 4.3	Philadelphia	1697	1760	1827	+ 7.7
979	1054	1021	+ 4.3	Pittsburgh	2028	2147	2234	+ 10.1
1164	1297	1366	+ 17.3	Portland, Me.	2602	2857	2924	+ 12.3
729	645	712	— 1.8	Portland, Ore.	1676	1488	1499	— 10.6
1015	1126	1023	+ 0.8	Providence	2157	2142	2173	+ 0.7
908	981	1006	+ 10.8	St. Louis	1729	1786	1918	+ 10.9
1081	984	1045	— 3.3	Salt Lake City	2224	2209	2154	— 3.1
393	399	356	— 9.4	San Francisco	930	959	760	— 18.3
1379	1515	1435	+ 4.1	Sault Ste. Marie	3285	3445	3443	+ 4.8
654	638	681	+ 4.1	Seattle	1812	1630	1589	— 12.3
1090	1224	1206	+ 10.6	Toledo	2278	2419	2655	+ 16.5
870	937	885	+ 1.7	Washington	1725	1653	1778	+ 3.1

*Compared with normal

Standards Adopted for Oilfired Floor Furnaces

COMMERCIAL STANDARD CS113-44, covering oilfired floor furnaces, has been adopted by the National Bureau of Standards after approval by the principal elements of the industry making and dealing in this product. The standard is effective for new production from February 17, 1944.

The standard applies to oilfired, flue-connected floor furnaces with or without mechanical draft or forced circulation, either manually or automatically controlled, and includes, in addition to General Requirements, the following ten sections:

Design and Construction, Performance, Laboratory Test Code, Publication of Furnace Ratings, Informative Labeling, Guarantees, Installation Requirements, Sizing, Placement and Venting.

Copies will be made available by writing National Bureau of Standards, Washington 25, D. C.

ODT Outlines Policy On Delivery Sharing

IN THREE COMPREHENSIVE documents, all published January 8, the Office of Defense Transportation seems to have brought into focus much of the work it has been doing in the past two years in the study of suitable and equitable delivery truck sharing programs.

The work has been slow largely because of apparent lack of interest on the part of truck operators, but now that the truck and manpower situations are daily becoming more critical it is time for fuel-oil distributors and their association con-

THANKS

We appreciate your patience with slow deliveries. Faster service is now in order.

Try us.

Newark Boiler Regulator Co.

BLOOMFIELD NEW JERSEY

AUTHORIZED PUMP SERVICE
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TUTHILL PUMPS
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METRO SUPPLY COMPANY
15 HENDERSON STREET EVERETT, MASS.
Phone { Day: Everett 2581 / Night: Malden 2961

ctions to give some thought to what uld be done should some joint action an become necessary.

The new ODT documents are in the rm of recommendations and they de- e the practical limits within which shar- g plans must be held to be legal.

Interested fueloil distributors should t copies by addressing Petroleum Car- r Section, Office of Defense Transpor- tion, 1204 New Post Office Bldg., Washington, 25, D. C. Ask for copies of e January 8 Recommendations under DT 121, 121a and 122 relating to Joint ction.

Name Change for York Oil Burner Co.

EFFECTIVE with the New Year, York Oil urner Co., Inc., ceased to exist under at name and will henceforth be known s York-Shipley, Inc. There has been no hange in management and all existing ntracts have been assigned to the lat- r named corporation and will be exe- uted by it.

York-Shipley, Inc., a holding company, had all of the stock of York Oil Burner, so it was decided advisable to eliminate one of the corporate set-ups in the interest of administrative simplicity, so now York-Shipley is also the manufacturing company.

Dustop Consumer Material

TO ASSIST ITS DEALERS in their campaign to get consumers to replace their own Dustop air filters periodically, Owens-Corning Fiberglas Corp. has prepared an attractive and convincing series of eight mailing pieces and eight newspaper advertising mats.

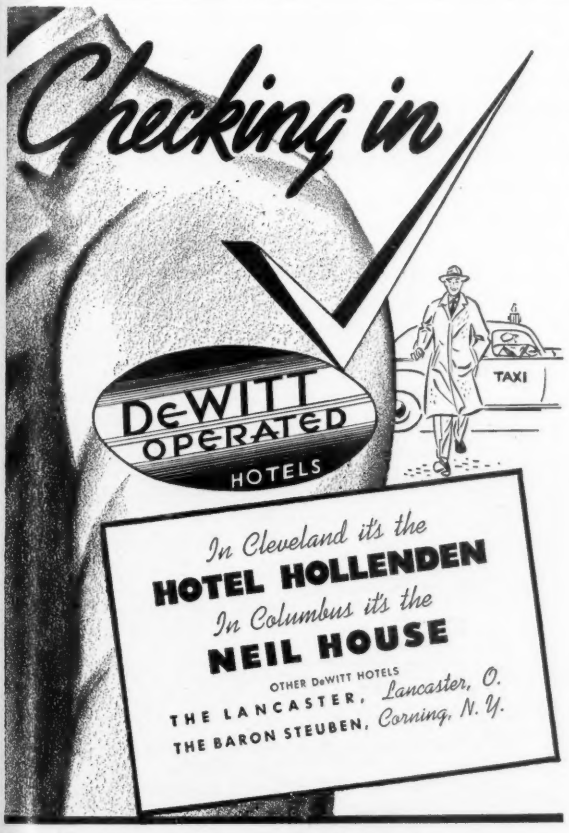
All pointed up with a "Save Fuel" theme, the copy emphasizes the ineffectiveness of clogged filters as air cleaners and dramatizes the struggle the furnace blower has to force air through filters, unless clean—thus wasting fuel.

BUSINESS WEEK of January 22 carried an illustration and description of a 45 pound warm-air furnace, complete with blower, and with enough capacity to heat a small house. The unit is being built by Norge Div., Borg-Warner Corp. for the Army Air Forces.

JURISDICTION over steam boilers of the type generally used as heating equipment was transferred January 22 from the Power Division of the War Production Board to the Plumbing & Heating Div.

SHELL OIL CO. completed on January 21 the Midwest's first fluid catalytic cracking plant at its Wood River, Ill., refinery. Two weeks earlier this refinery had been given its second award for achievement in war products production, with a star added to its Army-Navy "E" banner. Its original "E" was the first to a refinery.

BURNHAM Boiler Corp., Irvington, N. Y., has announced that its war program to date has included the production of hundreds of steel framed plywood assault boats for the Army, special shaped fuel tanks, engine foundations, gun foundations, landing barges, smoke stacks and complete steel and wood landing boats for the Navy, as well as portable houses for the Air Corps. Their first contract was received in June, 1941, 6 months before Pearl Harbor.



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Gives specifications for 2200 models and makes of burners by 237 manufacturers. Gives grade of oil officially specified for each burner, method of atomization, air source, ignition data, oil feed, gph rating and motor size 50c

(Bulk purchase prices on request.)

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232 Madison Ave. New York

EDCO SERVICE KIT

— FIG. 254 —

CONTENTS

33 Assorted Nozzles
33 4C Strainers
4 Nozzle bodies 1/8" or 1/4"
1 150 lb. Pressure Gauge
1 3/4" Forged Wrench (steel)
1 5/8" Forged Wrench (steel)
1 Yanke screw driver
1 Tip and Nozzle Body Jig
12 Tooth Picks
1 Standard Capacity Chart
1 Chart showing approximate combustion chamber sizes

Information upon request

EDDINGTON METAL SPECIALTY CO.
EDDINGTON, PENNA.

Oilheating Trends

(*Continued from page* 11)

ly exceeded their ration consumption rate to date, and 20.5% have slightly exceeded it. There would be a variety of interpretations of what is serious or slight, but taking the worst view the total oil involved is not enough to wreck the season's supply program.

About 1½% of consumers by mid-January had used all of their Period 1, 2 and 3 coupons, all of their inventory and change-makers, and had gone to the local board for a hand-out. They had burned about 25% more oil than they should have, indicating no self-rationing. If all of the 13.2%, reported as seriously overconsuming, had burned 25% too much, the excessive oil burned would be 3.3% of all oil consumed. Similarly, if the 20.5%, reported as slightly overconsuming, had exceeded their proper rate by 10%, the excess would be 2.1% of total oil. Adding the two groups, total excessive consumption would be 5.4% of the anticipated demand for the first half of the heating season. If most of the 33.7% who have burned too much could be coaxed back on the beam for the rest of the season, their early sins would have cost the industry only about 3% of anticipated total demand for the season.

Interesting, but less representative than the large study just described, are individual spot checks. One Westchester company with 2,300 customers and with an excellent follow-up system on its automatic deliveries, has only 165 who have overconsumed, and the average of those is 6.3% over, indicating only a trivial excess when spread over all of its customers. A secondary supplier asked four dealers to make a random spot check of customer cards to determine consumption per degree-day this season against last season. The result was a 7.1% higher consumption rate. A major oil company asked six of its Eastern divisions to each check a random sample of 100 accounts, and arrived at a weighted average consumption 11.5% above the same period a year ago.

In District II (Midwest) the coverage in the reports is not as thorough as in the East, yet the findings are probably not too far from being representative. Total number of customers served by distributors reporting this month is 15,600. Of those, 7% are in serious difficulty due to overconsumption, and 35.9% have slightly exceeded their ration rate. Midwest distributors may not differentiate between serious and slight cases in the same way Eastern distributors would. It is quite possible that the serious 7% are those who do not have enough valid coupons of all types to get through Period 3, since two individual distributors in the Chicago area reported, respectively, 14 and 15% of their customers in that shape.

Even so, if all of the 7% are up against it, their overconsumption is about 25%, and this would represent only 1.8% of total anticipated demand. Then if the 35.9% reported as slight overconsumption cases are as much as 15% in the red, the ratio of the excess to total demand is 5.4%, or a combined total for the two groups of 7.2% excess, when applied to total demand. Again, that is 7.2% for the half season and if most of them can be brought back into line for the remaining months the excess for the season would be only about 4%.

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He should possess those attributes necessary to profitably manage selling and merchandising activities involving a sales volume in excess of $10,000,000.

To such a man, substantial remuneration is available with profit participation depending upon the responsibilities he is able to discharge.

All information will be kept strictly confidential.

Furnish complete details in writing direct to:

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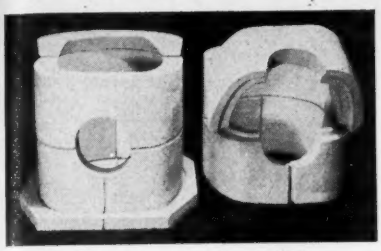

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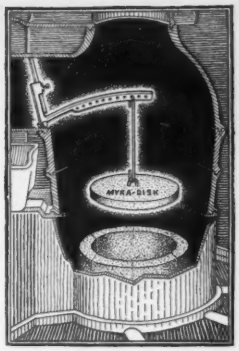
Saves oil, lowers stack temperature, raises CO_2 and quickens heating process. Fast becoming a "MUST" in gun-type conversion jobs. Carries year's warranty.

Outfit includes 10", 12" or 14" DISK, DISK-ARM, and full instructions.



INSULATION & REFRACTORIES CO. - - WILLIAMSON, N. Y.

Distributors were asked for opinions on the best way to handle the overconsumption situation, or rather they were asked to vote on three possible methods. The largest number, or 42%, advocate doling out additional rations to those in trouble; the next largest, or 35%, think it more fair to raise the value of Period 4 coupons with a small handout to those who have no coupons left—just enough to get them to February 8, when the next coupons are valid; the remaining 23% (in the East only) vote for combining Period 4 and 5 validity dates, to let people who are behind try to spread out their shortage as best possible, and then if they can't make out they could get a dole in early Spring. Other suggestions offered include advancing Period 4 validity date to February 1 in the East and to January 25 in the Midwest.

Reasons most frequently given for overconsumption, aside from general lack of trying to live within the ration, are colder than normal weather and the "flu" epidemic that caused thermostats to be pushed up to 70; several mentioned the too-optimistic publicity on oil supplies this season as contrasted to last season, and as contrasted to coal.

Some mentioned the fact that the rationing program this season, redesigned to make things easier for the distributor, has undoubtedly cost oil because of the large percentage of inventory and change coupons, good any time. With distributors able to make larger drops, customer tanks have been kept better filled, with none of the anxiety from near-empty tanks.

One distributor with 3,000 fueloil customers had 12 completely out of valid coupons and oil by January 1. He checked the reasons: 8 were due to errors in the rations; 2 were due to high temperatures maintained because of illness; 2 were due to improvident consumption. Two distributors feel that the quality of oil this season is decidedly worse than last, provides lower combustion efficiency. One of them says it's impossible to get a high CO_2 reading, even on his best jobs.

Some feel that the attitude of local boards has been too stiff when people are really in trouble, yet one reports that with 10 of his customers out of both valid coupons and oil, none of them had difficulty in getting a hand-out at the board.

Renters are mentioned by several as the most acute problem on overconsumption; it seems that migratory-type workers get a ration, use it all as far as possible, then move.

Running through most of the field comments is the impression that, whatever the cause or the best remedy, no one can be allowed to suffer and that within the limit of supply available, every last gallon should be given to the public, since a 65° temperature is rather dreary at best.

While the percentage figures show that the total excess amount of oil used by those who overconsume is not yet enough to wreck the supply program, nonetheless if allowed to continue unchecked—one man learning that his neighbor had gotten by with it—the whole idea could pyramid to serious proportions. It is urgent that both Government and the industry start now a vigorous campaign to convince consumers that heating oil is tight, that they are not going to be given repeated handouts and that they definitely must not exceed their proper ration rate for the balance of the season.

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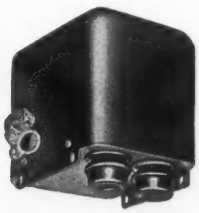
They Have Stood the Test of Years

The best testimonial to the dependability of Dongan Transformers is that they have for years been standard equipment on leading makes of oil-burners. Acquaint yourself now with the Dongan's many outstanding features with a view to improving your post-war product.



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"The Dongan Line Since 1909"

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WAR ON FUEL OIL WASTE

Simply spray E-Z, and the soot in fire chamber and flues vanishes instantly. Increases efficiency of oil. One trial will convince you. "EASY" TO USE . . . ECONOMICAL TOO!
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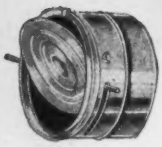

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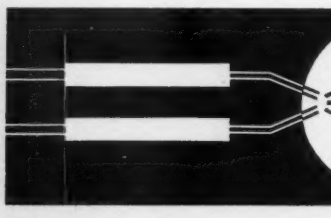

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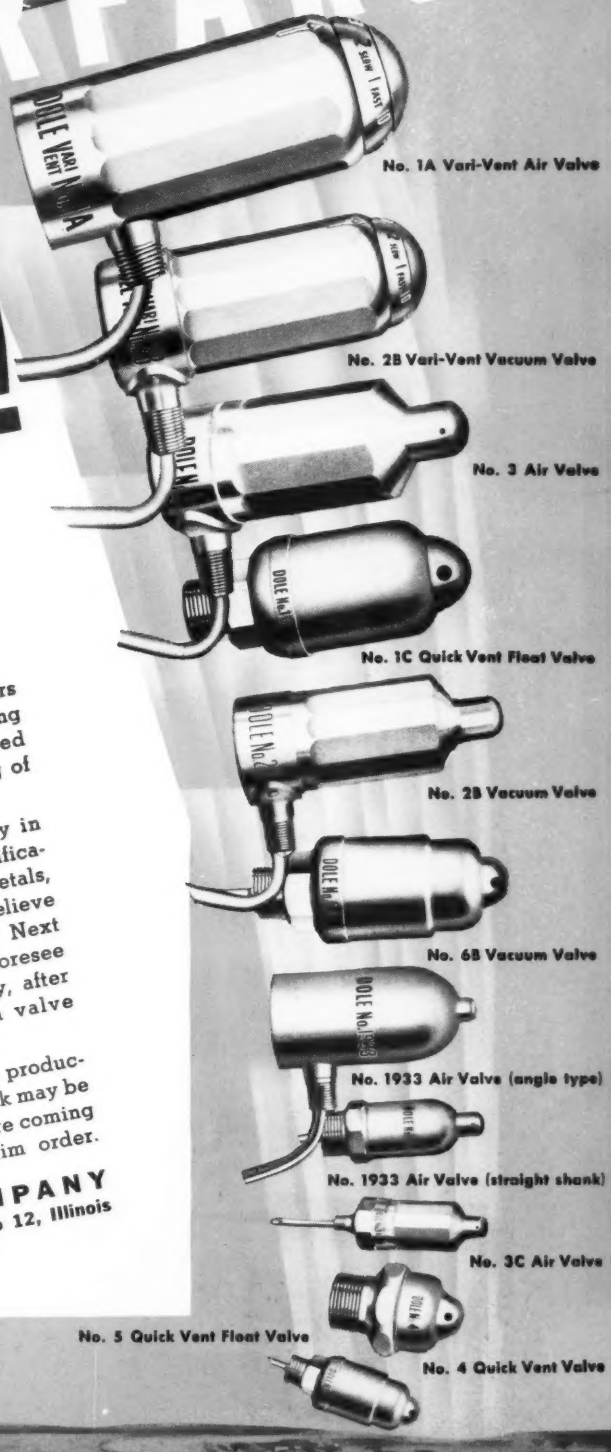
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Knowing the farmer intimately in his home, through years of installing farm lighting, power, and water supply systems, Delco Appliance appreciates how much he is accomplishing. The real salute to the American farmer will be written in the history of this global war and the peace to follow.

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